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AMERICAN FRUIT AND VEGETABLE JOURNAL

713 MASONIC TEMPLE, CHICAGO, ILL.

MASS. HORTICULTURAL SOC. AUG 14 1900 BOSTON

VIEW OF A TWO-YEAR OLD 640-ACRE ORCHARD IN THE BEAR RIVER VALLEY, UTAH.

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Editorial.

Get good, clean, basswood covers for the grape baskets.

New York, Michigan and Kansas still speak in glowing terms of their apple prospects.

Rain damaged the Georgia peach crop, yet much fine fruit has been placed on the market at fair prices.

Louisiana has an excellent crop of pears. The trees are loaded with the luscious fruit, which is already being picked and shipped.

Wayne, Marion, Clay and Richland counties of Illinois, promise a large crop of apples, notwithstanding the fact that canker worms and codling moths have done much damage, besides having so much fruit to drop.

Both Texas and Florida are growing pecans, which promises to be a very paying crop. Some astonishing stories are told. Trees seven or eight years old are said to produce five or six bushels, while the grove is good for a life time.

It pays to put the grower's name on the package. How gladly the purchaser of a good package of fruit looks it over and reads with pleasure the grower's name and address. The next time he buys that variety of fruit, he wants it to be from the same party.

Many poor, worthy apples have been sent to market. Some good on top with poor on the bottom. This method will never pay. After a man has been fooled once, he tries to see the bottom of the next basket. Fruitless fruit, packed in the best manner, with the grower's brand on each package is what will pay.

SCRAPE OFF THE OLD BARK.

While nature may do her best to relieve the tree of its old, dead and waste bark some times artificial relief may be helpful. The old bark that is loose, may be scraped off with a triangular shaped piece of iron with an iron handle fastened in the center of it, so that it somewhat resembles a small hoe. This tool has a blunt, and sharp edge, so that the tree is not bruised or cut. The dead, loose bark can be very quickly removed with this scraper, thus freeing the tree of a harbor for various insect pests, as well as improving its appearance.

MAKING DWARF TREES.

It is stated on good authority that the Japanese make dwarf varieties by simply pinching out the new buds as fast as they develop. The little trees are grown in pots from which they are transplanted every two or three years, at which time all the poor roots are cut off. Good, well fertilized soil is given the dwarf tree, yet the small space for the roots, and the pinching back of the new growth, retards the growth and thus makes the dwarf tree.

"THE AMERICAN SCHOOL SYSTEM."

Under the above title, Mr. Cook, of Iowa, discusses the subject in the Farmers' Voice, from a practical farmer's standpoint. Mr. Cook clearly sees that the schools of to-day do not either supply or satisfy the necessities of the "plain," common "people," which he states that,

"The assumption that our American school system is perfect, that that of no other country will compare with it, is one of the errors into which our people have fallen, much to their detriment.

I am aware that upon so mild a statement as this will in a majority of cases bring a volley of protests from a host of instructors from the big fellows in the universities down even to the humblest teachers in the rural schools. Besides teachers there is a large majority of the patrons of the schools that think our system infallible.

But there is a "respectable" minority . . . that are beginning to think that after all it may be that we have not made as much progress as we should, nor as much as we might, considering the rapid advancement being made "all along the line." . . .

That there has been progress will not be denied, but there is abundant room to question whether that progress is such as we have a right to expect in this time of universal progress.

For instance, it is pointed out that today with our children attending school about two months out of the year with modern text books and all vastly superior to those of half a century ago it is a fact that in the matter of general intelligence and fitness for the duties which devolve upon the citizen that the young man or woman of fifty years ago who attended the rural schools for but a few terms of three or four months in the winter would compare favorably with the young man or woman of today. Is it any wonder then that those who are conscious of this fact are inquiring why this condition of things exists?

But, little of our education is obtained in schools and if that little does not help us to pursue a judicious course in our life education outside of the school room it is of but little use to us.

I know young men today who have taken a regular college course who have at the same time acquired habits that make them more worthless than they would be if they were of only ordinary

Some time, perhaps not in a very distant future, we shall have schools to which farmers can send their sons and daughters with the assurance that they will not be taught to despise useful labor and aspire to be genteel loafers, etc.

Come to think, we have such schools now, but they are in the minority . . . I will endeavor to do all I can in my humble way to make all of our schools such that the farmer or any member of that class which we call the "plain people" may send his children with the assurance that they will be benefited and given training that will increase, instead of diminish their usefulness.

Mr. Cook's good hammer strikes the nail squarely on the head.

The editor of the Voice, in replying to Mr. Cook, while not agreeing with him in particulars as to wherein the fault lies, does admit that there is something wrong, and although he states that "The general complaint against the school system of the present day is not justified, there never before was, in all the history of the world, so much of intelligent earnest effort directed toward our educational system as is now being employed to discover and follow out the best methods; there never were more able and self sacrificing teachers than today are giving up their lives in the service of the American youth to fit them for life's duties." Yet in the very next paragraph he positively blames the average school board, elected by the "plain people," with discharge their duty "without money and without price," for whatever is wrong or rotten short in the schools or the system, when he states:

"And who is back of the school, locally considered? A school board made up, usually, of men who comprehend nothing of these great changes and what they mean to the life of the young."

But will the editor of the Voice tell us about the practical scholarship, the everyday business side of life, that is taught or studied in most of our public schools and colleges? Is it not a lamentable fact that the vast majority of graduates from both the public, high school, college or university have studied a little of many things, and unskilled in methods and have not learned essentials?

How is the Girl Educated?

In proof of this, how many of the young lady graduates have been taught to be home lovers, home makers, the grand, glorious and sacred duties of wife and mother, the intricate scientific interests, practical methods of cooking, sewing and domestic economy? But has not her delicate nature been subjected to a severe strain, her whole school life? Has it not been long and trying lessons in elements of science, mathematics, history, literature, music, art, etc., etc., all ideal but no real, until only too often the fair one falls in health and becomes either a physical wreck just for life's duties or becomes a cultured angel?

How is the Boy Educated?

And what of the boy who will even be induced to complete the course of the average high school, college or university? What can he do? Don't ask what he knows, for the only answer is "that one small book? can overall it all?" But is this average young man graduate ideal property for the great and beneath practical duties of the farm, orchard, shop, store, office, or small and everyday business side of life much better than his fair sister?

Professional Education.

If the graduate should choose and be generally inclined to be classed to be either a lawyer, doctor, minister, teacher, editor or author perhaps the most of his time and study possibly be used, but even as this point there is doubt and discussion.

Professions Crowded.

Yet are not all the professions crowded? Are not scores making a desperate struggle for existence? While on the other hand is not the shop, orchard and farm calling for skilled workmen and managers, with offering inducements and giving results, such as the world has scarcely known?

Now the trouble with the school system is not as the editor of the Voice states, with "a school board made up usually of men who comprehend nothing of these great

changes and what they mean to the life of the young," nor as he states in a previous paragraph to "the tendency to urban life on the part of the people," and as he states in conclusion "to the changed conditions of social and domestic life under which the demands for manual exercise are almost entirely things of the past" since there are many intelligent school boards, and thousands of our youth who do not come in the cities; while on the other hand, if the editor of the Voice will only ride out in the country and eat, sleep and work with the farmers, he can see that grain, grass, stock, fruit and weeds grow much as they did thousands of years ago; that even with improved machinery and modern methods, labor is about the same. The sun shines, the rain falls, and the daily round of life is very like the golden rule,

"We see the same sights and chew the same sun,
And run the same course our fathers have run."

Probably if the editor of The Voice had ever been a farmer and was a farmer now he would find plenty there to do for each member of the family and about the same kind of work as thirty or even 100 years ago.

Is Not This the Trouble?

But is not the real trouble with our "American School System" that we have been giving the same kind of instruction to all, i. e., literary and professional, while eliminating the practical studies of every-day life, demanded by the farmer, fruit grower, mechanic and business man? How much about the soil, the culture of trees and plants, the handling of tools, the keeping of accounts or the varied routine of every-day life is taught in our public schools and colleges? Is not this the trouble?

ILLINOIS APPLES GAIN FIRST PRIZE.

Word has been received from Paris that first prize was awarded to apples from Illinois on June 27. The premium fruit was grown at Belleville and Pittsburg, Illinois. The Chicago Tribune says that this premium fruit is only a fair sample of the product of the flourishing orchards of central and southern Illinois. According to the census of 1899 the only states which led Illinois in the production of apples were Michigan, Ohio and Kentucky. Missouri was nearly 100,000 bushels behind, while Ohio, the leader, raised 13,700,000 bushels, against the 9,000,000 bushels to the credit of the Sucker state.

MISSOURI APPLES TO THE FRONT.

We had not much more than read about Illinois' apples taking first prize than we also read that Missouri was first. Doubtless California, New York, Michigan, Kansas and Virginia will soon be heard from, and all be first just as they should be. However, the acting president, Wm. A. Taylor (not the ex-governor of Kentucky), writing from Paris under date of July 18 to L. H. Goodman, secretary of the Missouri State Horticultural Society, says:

"My Dear Sir:—Having just returned from the Paris exposition, where I have had charge of the United States horticultural exhibit, it gives me pleasure to inform you that in the temporary competition of June 27 the collection of apples of the crop of 1899 exhibited by your society was awarded a first prize, 'premier prix,' by the jury of awards. The collection insulted at that time consisted of seven varieties, displayed in quantity.

"As this is the fourth prize awarded to your society in successive competitions, I desire to congratulate you upon the fine showing made."

We lost the other sheet of this good letter, but it is strong enough to show Missouri is in the lead until we hear from the other states.

CONVENTION OF NATIONAL APPLE SHIPPERS.

On August 1, 2 and 3 the National Apple Shippers' Association will hold their sixth annual meeting at the Colonial Hotel, Cleveland, Ohio. The president is that "hustling" apple shipper, George C. Richardson, of the firm of Ryan & Richardson, wholesale apple dealers of Leavenworth, Kansas. Mr. A. Warren Patch, of Boston, is secretary. The program for the meeting is said to be a good one and much of interest to all concerned is promised.

FLORIDA ORANGE REPORT.

An idea of the orange crop of Tampa, Fla., can be obtained from a statement recently made by M. F. Giddens. He says that he has a grove of young trees, and this season he estimates he will get 1,000 boxes of fine oranges. He estimates that the Oak Hill settlement, in that county, will get about 30,000 boxes of fruit the coming season. An expert who has just returned from a trip through the Manatee section, says that the crop is going to greatly exceed his original estimate of 200,000 boxes. He declares that he never saw trees so heavily fruited as they are this season, and all show signs of such health that it is certain they will remain on the trees until ripe.—Canner and Dried Fruit Packer.

GREAT FRUIT CROP IN DELAWARE.

The outlook for Delaware fruit is magnificent and the year bids will be a record breaker, states the Fruitman's Guide. Every peach tree old enough to bear is loaded with fruit. Even old trees are no exception, and the fruit is of good size and quite perfect. Mountain Rose will probably come on about July 25 to August 1. Bartlett pears will give the finest crop in years—and of superior quality. Kieffer pears will this season become an important item. So many young orchards are bearing for the first time that former crops will be greatly surpassed. It is estimated that in Kent county alone at least 400,000 baskets (8s bushels) of Keiffers will be harvested.

Apple trees are loaded with fine fruit and the early varieties are now moving. I do not remember a year when apples were so perfect and free from defects.

Grapes have a heavy crop of good size and appearance.

The plum crop will be immense; both Japan and native varieties are full. The early sorts are now ripening. Quantities of watermelons and cantaloupes are planted and looking finely. The same is true of sweet potatoes.

PREMIUMS AWARDED AT THE PARIS EXPOSITION FOR AMERICAN FRUIT.

It will doubtless be a satisfaction to many fruit growers to read of the following award of prizes to American fruit exhibitors at the Paris Exposition on the dates given herewith:

Temporary Competition, June 13.
Class 45 Fruits and Fruit Trees.

First Prizes—Collections of Apples, crop of 1899, Division of Pomology, U. S. Dept. of Agriculture, general collection, 53 varieties from 12 states, Illinois State Horticultural Society, Nebraska State Horticultural Society, New York State Commission.

Collection of Citrus Fruits, Oranges, Lemons and Pomelos, California State Commission.

Collection of Oranges and Lemons in commercial packages, California State Commission.

Second Prizes—Collections of Apples, crop of 1899, North Carolina Dept. of Agriculture, Virginia State Horticultural Society, E. F. Babcock, Waitsburg, Washington; Elbert Manchester, Bristol, Conn.; Marshall Brothers, Arlington, Neb.; I. S. Perring, Blue Lakes, Idaho; E. F. Stephens, Crete, Neb.

Third Prize: Collection of Apples, crop of 1899, New Mexico College of Agriculture, P. Pedersen, Huntington Valley, Pa.

Class 46—Ornamental Trees, Bushes, Plants and Flowers.

First Prize: Collection of Sweet Peas, W. Atlee Burpee & Co., Philadelphia, Pa., 50 varieties in pots.

Temporary Competition, June 27, 1900.
Class 45—Fruits and Fruit Trees.

First Prizes: Collections of Apples, crop of 1899, Division of Pomology, U. S. Dept. of Agr., general collection, 40 varieties from 14 states, Illinois State Horticultural Society, Missouri State Horticultural Society, Nebraska State Horticultural Society, New York State Horticul-

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tural Society, Virginia State Horticultural Society, P. Gleason, Leroy, N. Y.

Collection of Oranges and Lemons in commercial packages. California State Commission.

Second Prizes: Indiana Horticultural Society, New Mexico College of Agriculture, North Carolina Dept. of Agriculture, E. C. Warner, Cheshire, Conn.

Third Prizes: E. F. Babcock, Waterburg; I. B. Perrine, Blue Lakes, Idaho; A. I. Weldner, Arcadiville, Pa.

CONDITION OF CALIFORNIA FRUIT.

In a recent bulletin sent out by the California Cured Fruit Association, it is stated that:

"We have carefully gathered reports from members of this association during the past week concerning the effect of what is known as the 'June drop' on the growing fruit crop, especially prunes, and reports are especially complete from this county (Santa Clara), which furnishes three-fifths of the prune output of the state, and convinces us that the severity of the 'drop' is unprecedented in recent years.

Reports indicate that the drop will reduce the output 10 to 20 per cent from previous estimates. The drop seems to have been more severe in this county than in the state outside. In some orchards nearly all the prunes are dropping from the trees.

The causes of the severe drop are: First, the hot spell that came just at the critical period; second, the lack of moisture in the sub-soil as a result of the light rainfall for the last few years. Only a few orchards have escaped. Prunes slightly affected by the spring frost remained on the trees until the hot weather came.

The effect on the peaches and apricots has been to ripen them prematurely, thus diminishing their weight and size. The pots are also drying out heavily on the trays. This will lessen the total output considerably.

PROSPECTS FOR FLORIDA ORANGES.

In the Packer for July 16, Mr. W. R. Fuller, traveling freight agent of the Florida Central & Pennsylvania R. R. Co., thus answers the question about the Florida crop:

"The following are Mr. Fuller's figures for the south Florida counties, expressed in boxes, by counties:

DeSoto	250,000
Manatee	200,000
Hillsborough	200,000
Polk	150,000
Lee	75,000
Orange	25,000
Lake	15,000
Osceola	15,000
Total	950,000

"Mr. Fuller allows 50,000 boxes for the scattering crops from the remainder of the state, which makes the total crop for the coming season 1,000,000 boxes.

"The average price for the coming season is approximated at $2 per box on the trees, which means a total revenue from the coming crop of $2,000,000. Over nine-tenths of this amount will come from the growers of south Florida.

"The crop of 1901-1902, Mr. Fuller reasonably estimates at 2,000,000 boxes, on which he allows a ruling price of $1.50 per box. While there will be a reduction of fifty cents in price, Mr. Fuller thinks it safe to give the benefit of the doubt and places the price at the figure named.

"This will make the value of the crop of 1901-1902 fully $3,000,000.

"The largest orange crop recorded before the freeze amounted to 1,000,000 boxes, the average price being only fifty cents a box. It will, therefore, be readily seen that Mr. Fuller's estimate being correct, the crop of 1901-1902 will be equal in value to that of the record-breaking ante-freeze year.

"The most gratifying condition is amply substantiated by the present status of the groves, the healthy movement of invested capital toward the south Florida orange section, the activity with which abandoned groves are being taken in hand by progressive growers, and the many more acres of new groves which have been set out in the past few years and which will be bearing by next season. Among these latter are those of the Manatee Lemon company, 300 acres, and the Alvord Grapefruit Company, 200 acres."

THE WEST VIRGINIA APPLE AND PEACH CROP.

Reported by Prof. L. C. Corbett, of West Virginia Agricultural Experiment Station for American Fruit and Vegetable Journal.

The outlook for the apple crop in West Virginia is not at all gratifying, but since this is the off year in our state we have no grounds for complaint. Some few orchards, both in the Northern and Eastern Panhandles, are carrying a light crop, while many others show 5 to 15 or 20 per cent. of a crop. The crop for the state will aggregate a number of thousands of barrels of fruit of superior quality; the fruit upon the trees is smooth and large for the time of year.

The peach crop will be the largest and of highest quality of any yet produced in the state. Old orchards are carrying a wonderful crop and many young orchards are showing a virgin offering of superior excellence. The crop will equal the half million mark. The superior color and flavor of the mountain peaches of West Virginia are fast gaining in the estimation of the peach-eating population of our cities and the up-to-date growers who place an (A1) article on the markets are certain to receive due compensation for their labor and care.

July 27, 1900.

SOUTHERN CALIFORNIA FRUIT AND PRUNE CROP SHORT.

Under date of July 20, President Sprague of the Southern California Deciduous Fruit Exchange, stated to a reporter concerning the fruit crop as follows:

"There will be very little dried fruit in this section this year except that which comes from the north. There will be no shipments of peaches or prunes. The apricot crop also is very short, only here and there is there a locality in which the apricot crop approaches the average. This shortage, for the most part, is caused by most unseasonably warm weather in January; followed by cold, but not frosty weather. The same weather conditions existed in Arizona also. This condition of the deciduous fruit crop is most disastrous to the southern California growers because many of them will have absolutely nothing to sell this year."

HORTICULTURE AT THE IOWA AGRICULTURAL COLLEGE.

By John Craig, Professor of Horticulture and Forestry.

The purpose of this article is not so much to discuss the courses of study offered in Horticulture at the college as to indicate briefly the trend of horticultural evolution which is taking place in recent years, and to show the bearing of a college training upon it.

In the beginnings of every agricultural industry the amateur idea predominates. Things are grown in a small way. What to grow is a more important question than how to grow it. Later, with the centralization of peoples, markets are created, then the commercial idea enters largely into the enterprise. The sentiment which induces the amateur to begin the work is replaced by the money making idea, the central thought of commercialism.

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porations or capitalists are on the increase. They are usually successful because the business side of the enterprise receives careful attention. The routine of orchard management is properly carried out and there are no leaks in the business of marketing. Orchardists of this kind grow standard varieties of apples. Their first aim is to produce quantity; the second is to produce a marketable product. They are competitors in the world's markets growing such fruits as may be produced Bulley SEVEN . . . . . Irish in large quantity and shipped with satisfaction; in short, they are growers of staples.

With this kind of grower more and more in evidence as the years go on, it would appear that in time the small producer might be entirely slipped out of the market.

Quality vs. Quantity.

Is there not, however, a class that is willing to pay a premium for a product having a better appearance and possessing higher quality than is found in the average market article? There is no question about the truth of this statement. There is a demand for high quality. It is comparatively limited, and it requires personal attention on the part of the grower to keep it alive. But this demand may be developed considerably, the extent depending upon the tact, skill and business ability of the grower. It is a market, in short, which depends very largely upon the individual who enters for it, and therefore may be called a "personal" or "special" market. The large commercial grower is not likely to take entire possession of the horticultural field; for in Iowa there is abundant opportunity and plenty of room for growers of either class. The specialist selects varieties of high quality and fine appearance and brings all his skill to bear on the production of a gilt-edged article which commands the highest price; the commercial orchardist grows standard kinds in a large way, reduces cost of production to a minimum, and accepts average market prices—and there is money in it.

The Amateur.

Besides the two classes mentioned, there is a third class, the individual who grows fruit, not to sell, but in addition to the comfort and necessities of home life. To brighten the home and give such surroundings as will tend to alleviate the dullness and heartlessness that may under adverse conditions envelop life on the farm. There are few ties that connect a man so closely to the farm as those which associate him with the tree planting operations, and may I add the fruit-bearing trees, of his youth; and these ties bind more closely as the years go on. Should not this spirit, then, be cultivated?

The College and the State.

The connection between the work of the Department of Horticulture and that of the fruit growers of the state is intimate. Principles are taught at the college and these may be applied with equal advantage by the amateur, specialist, or commercial orchardist. The practices may vary, but the underlying principles remain unchanged.

Factors Bearing on Successful Orcharding.

These may be cited under four captions: 1—Tilling, including fertilizing; 2—Pruning; 3—Spraying; 4—Thinning.

Iowa is coming to the front as an apple producing state. High quality and handsome appearance help apples to sell; these are characteristics of her fruits. Apples may be grown over the whole state. Plum growing is developing rapidly with the introduction of hardy natives. Pear growing is a profitable enterprise south of the central east and west line. Peach growing has developed wonderfully in recent years.

Iowa seedlings are coming to the front and proving themselves better adapted to soil and climate than the eastern varieties, and so it is in all lines of fruit growing. Pomology is well established and a factor of increasing importance to the state. It will continue to develop in proportion as skill and intelligence are brought to bear upon it.

The function of the Department of Horticulture is to instruct the would-be fruit grower in the principles and practices of his calling and to assist those interested or engaged in the work, with such helps as it may be possible to give.

On July 1st, the Secretary of Agriculture sent out the following fruit report: "While the whole of the fourteen states having 3,000,000 or upward apple trees in bearing at the last census report a decline in the condition of apples since June 1, they still have the promise of an exceptionally large crop. The condition in New York is 29 points above the ten-year average, in North Carolina 26, in Maine 19, Pennsylvania 18, Ohio 15, Kansas 13, Virginia 12, Illinois 11, Michigan 10, Missouri 8, Indiana and Tennessee 4, Kentucky 3, and Iowa 1 point above the respective average for the last ten years."

* * *

The Boxers' uprising in China is seriously affecting the ginseng diggers of Indiana, is informed by the Globe-Democrat, most of whom live in the hills of Brown county. The root is not much used in this country, but, until the present troubles in China, not enough of it could be gathered to supply the demand from the flowery kingdom. Prices were therefore high, and the diggers, while they received only a small part of the profits, were able to make a fair livelihood. Now the demand is suspended.

* * *

Early Western New York apples coming in are very small. The winter varieties with more rain may be larger. Mr. Charles Forster, who has recently made a canvass of the apple territory of the country, says that "from every point of view there is reason for conservatism." The commercial situation abroad is so much superior to four years ago that he thinks Europe will take our surplus at good prices.—Grange Bell.

* * *

The superintendent of parks of Cincinnati was very much perplexed to observe in many of the flower beds of Eden Park quantities of what appeared to be strange flowers, but which turned out to be onions, peppers, cabbages and tomato plants, which seed had become mixed with the flower seeds in some careless manner. It required the careful work of a gardener to remove the intruders that had "gotten in the wrong bed."

* * *

The managers of fruit evaporators of Canandaigua, Penn Yan, East Bloomfield and Hall's Corners as well as a number of operators in a smaller way, says the Citrus-Belt "have met and agreed that this coming fall they will not buy fruit that is not selected with care. Last year they lost money handling ungraded fruit.

* * *

J. H. Hale, of Georgia, stated on July 1st that the peach crop of Georgia had been greatly damaged by rains. Out of a prospective crop for the state of 3,000 cars, there would not be more, owing to the rotting of the peaches caused by the excessive rains, probably not over 1,500 to 1,800 carloads.

* * *

The strawberry crop of Hood river, Oregon not only line but good prices were obtained. Montana towns proved good market points. It is said that the berries paid $175 per acre, many crates selling at $2.20 to $2.35 per crate, while some special shipments sold at $4 per crate.

* * *

New Castle, Cal., recently had a very destructive fire in which property to the value of $100,000 was destroyed, including all the fruit houses and 10,000 boxes of fruit. The Southern Pacific Railroad Company lost $35,000 in fruit and fruit cars.

* * *

The prospect for an abundant crop of watermelons and cantaloupes was never more promising than now. A few extra early specimens have reached maturity but there will be no extensive shipments before Aug. 10.—Rocky Ford Enterprise.

* * *

Mr. Martin, of Brockton, N. Y., is preparing to convert his large crop of grapes into wine. He is said to have been one of the first to have engaged in the business of growing grapes on an extensive scale at that place.

* * *

The present indications are that the South Shore Lake Erie grape crop from the three states of New York, Pennsylvania and Ohio will touch closely the 10,000 carload mark the season of 1900.—N. Y. Grape Belt.

* * *

The truckers of Hastings have been strictly "in it" this season. They have shipped about 15,000 barrels of white potatoes for which they received $3 to $4 per barrel.—East Floridian.

* * *

The Maine apple crop is very good. Some damage was done by the caterpillars.

VIRGINIA HOMES

You learn all about Virginia lands, soil, water, climate, resources, products, fruits, berries, mode of cultivation, prices, etc., by reading the VIRGINIA FARMER. Send 10 cents for three month's subscription to

FARMER CO., Emporia, Va.

Or send 50 cents to the AMERICAN FRUIT AND VEGETABLE JOURNAL and obtain both papers for one year.

CONDENSED FRUIT AND VEGETABLE REPORT.

From the U. S. Climate and Crop Bulletin

July 16, 1900.—The continued dropping of apples in New England, the central valleys and upper Lake region has materially reduced the prospects for this crop in these districts, but the outlook continues promising in New York and portions of Pennsylvania, Ohio and Indiana.

July 23, 1900.—Complaints of apples dropping continue from many important apple States in the central valleys, as well as in New England and portions of the Middle Atlantic States. In New York the outlook continues promising, and an abundant crop from northern Indiana and portions of Illinois and Pennsylvania is indicated.

July 30, 1900. The outlook for apples in New York and Pennsylvania continues promising, and improved prospects are reported from portions of Illinois, Missouri, and Iowa, while dropping is still quite extensively reported from a number of important apple States.

TELEGRAPHIC REPORTS BY STATES

New England, Boston, General heavy rains greatly benefited crops; early potatoes a failure, late improving; blackberries and blueberries fair promising; raspberries poor; tobacco topping continues, large crop expected.

New York.—Ithaca: Abundant rains made last week the most favorable of the season and revived crops and pastures, which are making excellent growth; apples, peaches, pears and grapes continue promising.

New Jersey.—New Brunswick: Drought and conditions that prevailed in some portions of all sections effectually broken by general rains of 23d and 24th; corn has recovered; apples continue dropping; peaches, pears and plums very promising.

Pennsylvania.—Philadelphia: Timely rains of great benefit; outlook bright for corn, late potatoes, apples, and other fruits; tobacco and buckwheat improved, pastures green, sand vetch doing well.

Maryland and Delaware.—Baltimore: Moderate temperature and frequent rains; peaches abundant, but small; apples a short crop; grapes ripening, crop abundant; outlook for potatoes, tomatoes, and tobacco much improved; all garden stuff made rapid growth.

Virginia.—Richmond: Drought broken by fine rains; vegetation revived and advancing rapidly; melons damaged beyond recovery; late corn and tobacco now promising, also pastures and gardens; some seeding of turnips completed; Irish potatoes dug; apple crop short.

North Carolina.—Raleigh: Drought thoroughly broken by copious rains, which, with cloudy weather and moderate temperature, greatly revived crops; sowing turnips begun; fruit and melons abundant; grapes ripening; fine yield of honey.

South Carolina.—Columbia: Young corn, sweet potatoes, pastures, cane and rice benefited by the rains.

Georgia.—Atlanta: Crops generally benefited by recent rains; large quantities of turnip seed sown; quantities of peaches being shipped from northern counties; prospect favorable for large crop of pears and grapes; rice, cane, sorghum, and pastures doing nicely.

Florida.—Jacksonville: Cane, peas, sweet potatoes, rice, and pastures did well; citrus fruits good growth; large acreage set to pineapples and cabbage; turnips being sown.

Alabama.—Montgomery: Melons a failure; peaches still plentiful.

Louisiana.—New Orleans: Too much rain retarded growth and cultivation of crops, fruit generally poor.

Arkansas.—Little Rock: Rainfall generally secured crop of potatoes about all planted in good condition; apples rotting and falling off, peaches abundant, quality generally poor.

Tennessee.—Nashville: Good rains throughout state greatly revived vegetation; potatoes, late kinds, due; fruit rotting.

Kentucky.—Louisville: Rainfall heavy, but irregularly distributed; apples good, other fruits good.

Missouri.—Columbia: Timely rains, but more needed in some sections; apples improved some, but generally light crop and many of poor quality; peaches peculiar somewhat better.

Illinois.—Springfield: An excellent week for growing crops; apple prospects seem improved, better north than south, good crops on sprayed trees.

Indiana.—Indianapolis: Frequent rains, potatoes have seldom promised better, prospect for a good apple crop diminishing.

West Virginia.—Parkersburg: Generally fair and moderately cool weather, with abundant sunshine and ample moisture, favorable for crop growth and vegetation; some turnips sown; potatoes ready to dig; apples still dropping.

Ohio.—Columbus: Weather favorable for farm work and vegetation, except some damage to grain; early potatoes yielding light; late fairly benefited by rain, apples dropping less.

Michigan.—Lansing: Heavy rains in southern counties; beans, potatoes and sugar beets making good growth, corn much improved, but needs another week.

Wisconsin.—Milwaukee: Showers general first of week; potatoes doing well, early varieties in market; tobacco good, apples light crop, quality good.

Iowa.—Des Moines: Widely distributed showers, apple crop light in southern section and somewhat better in northern.

South Dakota.—Huron: Local rains sufficient; ample except in extreme northern counties; apples dropping considerably.

Kansas.—Topeka: Apples good east and improved in central.

Oklahoma and Indian Territories.—Oklahoma: Rains have improved late corn, late fruit maturing.

Colorado.—Denver: Light to copious showers generally east of foothills, dry on western slope and Rio Grande Valley; last week's weather favorable to plant life; late corn and potatoes improving, sugar beets, cantaloupes, and tomatoes well advanced and in excellent condition; plowing begun in some districts.

New Mexico.—Santa Fe: Fair rains, except in Taos and Rio Arriba counties, where disastrous drought obtains and crops and ranges are drying up; drought in southwest much relieved but grass not yet started, high winds dropped considerable fruit.

Arizona.—Phoenix: Scattered rains in south and west, drought continues elsewhere, especially in northern tier of counties, where crops are short and many cattle are dying, temporary increase in water for irrigation, and vegetation partially revived in central agricultural valleys; raisin making begun in Salt River Valley.

Washington.—Seattle: Dry and hot in eastern and warm in western section, in western section cutworms have appeared in vast numbers, have destroyed half the vegetables, and are devouring beans and fruits of fruit trees, spraying ineffectual.

Oregon.—Portland: Dry, with normal temperature west, very warm east; speckled army worm very destructive to clover, potatoes, and gardens in Willamette Valley and east districts, hops doing nicely, irrigation water scarce, tree fruit, except peaches and Bellebuzz grapes, abundant.

California.—San Francisco: Higher temperature at close of week in interior, elsewhere nearly normal, fruit picking continues, deciduous fruits heavy crop, except in south; prunes dropping, raisins conditioning, probably average yield of grapes, though some adverse reports from San Joaquin Valley, citrus fruits and walnuts good.

WASTING BANANAS.

The press dispatches state that the Louisville & Nashville R. R. dumped twenty-nine cars of bananas into a creek near Ashley, Ill. The freight bill alone amounted to $2,900, or $100 per car, which the shippers paid. The fruit was billed to Chicago and it is said was dumped in order to keep it off the market and thus prevent a glut and hold up prices.

At Mayville, N. Y., the vines are said to be full of fine grapes, with good season.

It is said the Florida orange growers are feeling much encouraged over the outlook and are giving the groves better care than ever before. The prospects now are for a better crop of oranges in Florida than they have promised for several years. It is stated that many of the groves that were frozen down to the ground have sent out strong shoots, many of which have now become bearing trees and promise a crop.

Nova Scotia claims to grow the best Gravenstein apples.

Chicago and Michigan City Line

NEW STEEL STEAMER

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Makes two trips daily (three Saturday) to

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Leaves dock, State st. Bridge, 9.30 a.m. and 7.30 p.m. Returning arrives at Chicago 9.00 a.m. and 7.00 p.m. Saturday Matinee Trip 4.15 p.m. back at 10.30 p.m. Saturday night 11.00 p.m.

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Denver, Colo.

Horticulture in Public Schools.

HOW TO BEGIN THE STUDY OF BIRDS.

By H. W. Fish, Rhode Island College.

Do you realize how important is the life of a little bird? A man who has studied the question has said that if all the birds should be killed the earth would within nine years become uninhabitable on account of the swarms of insects, notwithstanding all the efforts of man to keep the insects in check by means of poisons, poisons and traps.

It is believed that our native wild birds are rapidly diminishing in number. It is said that the decrease in the last fifteen years in Rhode Island has been sixty per cent; that where fifteen years ago there were ten birds, today there are but four. Every boy and girl can aid in checking this destruction and thus in preserving these useful and beautiful birds. Will you do your part?

You will find it a great pleasure, when you are grown up, to know the birds. Begin by observing them at every opportunity and writing the answers to the following questions. Fill out the blanks from your own observations.

THE BLACKBIRD FAMILY.

Redwinged Blackbird.

Are they found in the woods, in pastures or in city trees? In dry or in wet places?
Usually in flocks or singly?
On what date did you see the first one?
Is there any considerable difference between the coloring of the father and that of the mother bird?
Do they walk, run or hop when on the ground?
What is their food?
How and where do they find it?

Crow Blackbird or Purple Grackle.

Are they found in the woods, pastures or in city trees? In dry or in wet places?
Usually in flocks or singly?
On what date did you see the first one?
Is there any considerable difference between the coloring of the father and of the mother bird?
Do they walk, run or hop when on the ground?
What is their food?
How and where do they find it?
How can you distinguish the redwing from the grackle?
Add anything of importance that you have observed.

THE FLYCATCHER FAMILY.

Phoebe-bird. Bridge-Pewee.

Why has it received these names?
Are they found in the woods, in pastures or in city trees? In dry or in wet places?
Usually in flocks or singly?
On what date did you see the first one?
Is there any considerable difference between the coloring of the father and of the mother bird?
Do they walk, run or hop when on the ground?
What is their food?
How and where do they find it?

King-Bird. Bee-Eater. Bee-Martin.

Can you detect any family resemblance between the Phoebe-bird and the King-bird?
Are they found in the woods, in pastures or in city trees? In dry or in wet places?
Usually in flocks or singly?
On what date did you see the first one?
Is there any considerable difference between the coloring of the father and of the mother bird?
Do they walk, run or hop when on the ground?
What is their food?
How and where do they find it?
How does the flycatcher's method of feeding compare with that of the blackbird?

THE SWALLOW FAMILY.

Tree Swallow. White-breasted Swallow.

How do you know the Tree-Swallow?
Are they found in the woods, in pastures or in city trees? In dry or in wet places?
Usually in flocks or singly?
On what date did you see the first one?
Is there any considerable difference between the coloring of the father and of the mother bird?
What is their food?
How and where do they find it?

Barn-Swallow.

How do you know the Barn-Swallow?
Are they found in the woods, in pastures or city trees? In dry or in wet places?
Usually in flocks or singly?
On what date did you see the first one?
Is there any considerable difference between the coloring of the father and of the mother bird?
What is their food?
How and where do they find it?
What is the swallow's method of feeding, as compared with that of the blackbird and flycatchers?

THE THRUSH FAMILY.

Robin.

Are they found in the woods, in pastures or in city trees? In dry or in wet places?
Usually in flocks or singly?
At what season in flocks?
On what date did you see the first one?
Is there any considerable difference between the coloring of the father and of the mother bird?
Do they walk, run or hop when on the ground?
What is their food?
How and where do they find it?

Cannery News.

CANNING TOMATOES.

The following method as given by Mrs. Lawrejoy in the American Agriculturist is so much like that so successfully used by the dear little woman that tries to make the editor's home happy that we know it is good.

"The first step for success in canning tomatoes is the proper selection of the vegetable. Reject all soft, overripe tomatoes as well as those underripe, for only firm, solid, well-reddened tomatoes will produce a perfect result. Before proceeding further, get the cans ready. Whether old or new are used, wash them in cold water, then in hot water, in which a plentiful supply of soap powder or sal soda has been dissolved; this will sweeten them and destroy any lingering taint. Especially examine the covers and clean with a small scrubbing brush, and the last thing plunge each jar and cover in boiling water; this will destroy any floating mold or fungus germs that may start future fermentation.

A word about the kind of cans most. Personally, I much prefer glass for everything. Stone cannot be depended upon, for if a small spot is not covered by the glaze, air will come through. Big porous ware; then, too, the salt glaze is gradually destroyed by use. Tin I never use, but if you must use tin cans, use new ones and wash as carefully as the glass.

Now you are ready to prepare your fruit. Scald a few at a time in boiling water, letting them remain in the water only long enough to loosen the skins. Remove all in one and you will not have mushy fruit from over-scalding. Peel all you are to can before you begin, so you can give undivided attention to the cooking. Put only enough in the kettle at one time to fill a few cans, then the last will not be over-cooked and watery.

Do not put any water in the kettle, as enough juice will have run from them while peeling to start the first kettle. Season with salt as for the table. Let them boil up until thoroughly scalded, but it is not necessary for each tomato to soften, as quite solid fruit may be heated through. Just here your judgment must be used. Have the fruit as nearly whole as possible, but if not scalded through, they will not keep. Fill to the brim one can at a time. Use a new rubber and a cover carefully fitted previously, so there will be no delay.

Right here you must work fast. Fill the can with the boiling fruit, add one more tomato, wipe the seeds off from about the rubber, screw on the top, which will press down the extra tomato and insure a full can. After the top is screwed on as tightly as possible, reverse the can a moment and if by any chance there is an imperfection in the cover, can or rubber, or a crack, a few bubbles of juice will escape and you must return the contents of the can to the kettle and do your work over. This often saves a good many failures.

You will have much finer canned tomatoes if you fill the cans with the more solid parts and only pour in enough juice to fill in the spaces. The last of the juice may be boiled down for a can or two of juice for tomato soup."

VALUE OF A CANNERY.

Tomato Cannery Catechism.

Question. What are the best varieties for factory use?

Answer. Livingston, Perfection, Favorite and New Stone.

Q. What time should they be planted in this latitude?

A. Seeds should be sown in hotbeds four weeks before planting. Plants should be transplanted soon after last frost.

Q. How many plants to the acre is the stalde?

A. About 2,200.

Q. What is the average yield per acre?

A. 250 to 300 bushels.

Q. What price do they bring at the factory?

A. Twenty cents per bushel for good tomatoes.

Q. How many No. 3 cans will one bushel produce?

SPRAGUE CANNING MACHINERY CO.

Sales Office:
502 Masonic Temple,
Chicago, Ill.

Factory: Hoopeston, Ill.

A. Fourteen to sixteen. If good tomatoes sixteen cans.

Q. What is the average cost per dozen ready for market?

A. From 55 to 90 cents according to ability of the packer to handle help.

Q. How many cans will the No. 1 plant put up in a day?

A. About 12,000 No. 3 cans.

Q. How many girls will be required to peel them?

A. From forty to fifty.

Q. How many other hands will it require?

A. From ten to twenty.

Q. How many girls is required to label them?

A. One girl will label about 3,500 cans per day.

Q. What do factories pay per thousand for labeling?

A. Twenty-five cents per thousand.

Q. How long should they stand in stock to determine damaged stock before labeling?

A. Three to five days.

Q. What do standard tomatoes usually bring in market?

The following table from the Country Gentleman gives the highest and lowest price for standard grade tomatoes, No. 3 tins, in the New York market for thirteen years, beginning with 1886 and ending with 1898.

	High-est.	Low-est.		High-est.	Low-est.
1886.....	$1.45	88½	1887.....	$1.30	95
1888.....	1.05	90	1889.....	.88	81½
1890.....	1.20	77½	1891.....	.85	80
1892.....	1.00	82½	1893.....	1.45	95
1894.....	1.02½	67½	1895.....	75	60
1896.....	.80	57½	1897.....	1.00	90
1898.....	1.00	80	1899, Aug.	85	80

Authority for above quotations, the American Grocer.

Standard tomatoes are always marketable at a good profit both to the producer and manufacturer.—Subscriber.

SUPPORTS FOR TOMATO VINES.

It is better for the plant and better in keeping the fruit clean and healthy to have an adequate support for the main stalk. As soon as the fruit becomes heavy it will either break down the plant or bend it so as to rest on the ground; if the latter, it is liable to decay.

The common way is to tie a firm stake. Wooden barrel hoops are used and sometimes one long strip of board is made to support five or six plants. A writer in Orange Judd Farmer suggests that for garden use where only a few tomato plants are set, some kind of an inclined support or trellis will give better results than tying the plants to a stake or letting them fall to the ground in a tangled mass.

"In the use of stakes" says the writer "they will require frequent tyings and when not supported they fall to the ground. By contact with the soil or in the absence of a free circulation of air, or in the humid atmosphere, the fruit often decays before it is ripe, or when partly ripened. This trouble is entirely avoided or greatly lessened by the use of a simple support." A trellis suggested by L. D. Smuck, is simply four or five strips of boards two or three inches wide nailed in crosspieces. The upper end of cross strips has an inch hole bored in each one, into which short supports are placed. By another method quite similar, the supports are hinged to the main frame, rendering it more portable and easy for storing away. In either plan various angles may be obtained. Set the rows of plants east and west, placing the support close to the plants upon the north side.

One advantage of these supports is that they are portable and can be kept over from year to year.

VALUE OF TOADS.

Have you learned to value the full worth of toads in your warfare against insects? Do you believe the boys that they are genuine friends, not enemies? If not, learn this lesson from the farmers of France. In many rural communities the Frenchmen put up boards with this inscription "Toads keep agriculture; destroy twenty to thirty flies each hourly. Don't kill toads." And this of birds. "Birds. Each department of France loses yearly million of francs by the injury done by insects. Don't kill the birds." Vick's Magazine.

TO KILL CABBAGE WORMS.

Mix one pound of the leaves of pyrethrum with 100 gallons of water and spray or sprinkle the cabbage leaves and it will kill every worm which lodges and not hurt either the cabbage or mankind.

ROSE BUGS.

These bugs are destroying both apples and farm crops, says a dispatch from Harrisburg, Pa. "The insects are [illegible] as [illegible] in great swarms, and settling on the apple and peach trees, [illegible] every leaf and bud is eaten and the tree left apparently dead. Berry, currant and like crops are reported entirely destroyed, while thus far no remedy for the destruction of the pest has been obtained.

It is stated that squash bugs can be driven off by placing coal oil and ammonia [illegible]

ONE THOUSAND DOLLARS FOR A GOOD APPLE.

The Minnesota State Horticultural Society has offered a premium of $1,000 to the person who originates or discovers a new apple that will be "as hardy as the Hyslop, equal in quality and size to the Wealthy and as good a keeper as the Malinda." It is thought that this variety can be obtained from a cross between some American and Russian varieties. The party states that "an apple as hardy as Hibernal, as choice as a Jonathan and as long keeping as the Ben Davis would be worth millions of dollars to the Northwest."

SOME PUMPKINS
In the Land of Irrigation, Utah.

A choice monthly magazine, **How to Grow Flowers** and, the American Fruit and Vegetable Journal, both for one year, with six beautiful roses, all for only 50 cents. Address this paper.

HOMESEEKER'S DEPARTMENT

EXCURSION TO EL CAMPO.

On August 21, the Homeseeker's Department of the American Fruit and Vegetable Journal will have an excursion to El Campo, to enable our readers and their friends to see for themselves the great and growing Coast country.

The train will leave Chicago at 6 P. M., via Atchison Topeka and Santa Fe R. R. The rate will be one fare, plus $2 for the round trip. From Chicago, this will be $25.55, from Kansas City $24.80 and from St. Louis about $27.00.

This same form of reduced rate, that is one fare plus $2, for the round trip, may be obtained from any Santa Fe office on the above day and date. Step to the agent of whom you buy a ticket that you desire to go to El Campo, Tex., to view the country and the colony lands. The tickets are good for 23 days.

To each purchaser of 160 acres of land, railroad fare not to exceed $40 will be deducted from the price paid for the land.

Lay aside your work, take a vacation and go and see the crops and country, with its marvelous resources. Prove to your satisfaction that the summers are as pleasant as in the North, and yet no disagreeable winter.

Go and see land that is not poor or hard clay, but rich, fertile soil that will produce corn, cotton, sugar cane, fruit, vegetables, grain and many other crops. See a progressive colony with good schools, churches, and a nice little town with many modern improvements, all built up within the past few years.

Remember that we have about 30,000 acres of this choice colony land, nearly enough to give 200 men a farm of 160 acres each, that the title is absolutely good, warranted and guaranteed, and that we will sell it, with it lasts, for one-fifth cash, and the remainder in seven annual payments. Don't wait to sell out, but secure 80 or 160 acres of this choice rich land now, before the price is increased.

Join the excursion, and have a good time anyhow.

The editor of the American Fruit and Vegetable Journal intends visiting the El Campo colony in August, and will tell our readers what he observes on the way.

CROPS FINE.

One Hundred Dollars Per Acre in Cabbage.

Captain Daunds, one of Wharton county's most respected citizens, was in town for a few hours Tuesday shaking hands with his many friends and expressing himself on crop conditions as he has seen them, states the El Campo Eagle. The captain says that he does not have to speak from hearsay, that on his own farm he has the genuine stuff and that he is well pleased with the prospects. Two or three weeks ago he was a little discouraged because his cotton did not seem to put on any fruit but since that time the field has gone through a wonderful change. Every cotton stalk is heavily fruited and still improving. Speaking of cabbage, Captain Daunds stated that he experimented with a few acres last year and that he realized about $100 an acre from that which was given proper attention. He expects to engage in the growth of that crop on a much larger scale this fall and winter. He is an enthusiastic believer in the possibilities of this country and does not see where people can find cause for complaint.

NEW VARIETIES OF CORN AND TOBACCO.

It is no wonder that the Coast country is developing so rapidly when one learns of the rich soil, good and mild climate, many resources and marvelous productions. This item from the Beeville Bee, indicates new possibilities.

"At the recent Farmers' Congress of the Agricultural and Mechanical college the San Jacinto county exhibit had some growing tobacco plants, both filler and wrapper, representing a new industry in that county. There were also stalks of a new variety of corn, known as "joint corn." It produces an ear at every joint, and it is claimed that it yields 75 to 125 bushels to the acre by weight. It was originated in San Jacinto county and has been grown for three years."

THREE CROPS IN ONE YEAR.

In order that our readers can learn the facts of the great Coast country of Texas, we give following from the El Campo Eagle of July 27, 1900:

"The writer has had occasion to visit a considerable portion of the lower country during the past few days and has seen many different crops, and must say that he has never at this time of the year found better prospects, notwithstanding the many drawbacks, such as the hail storm, hail storm and continued wet weather, experienced this year. In looking over the crops of Chas. Isham, who has charge of Taylor Brothers upper plantation, he was shown a cut of about twenty-five acres of corn that now has on it the second crop for 1900. During the first week of March this cut was planted, it grew and became fully developed ears, when it was cut down and fed to the stock. At that time it was estimated to contain about thirty bushels per acre. In the first week in May the second crop was planted and it is now fully developed corn, but land is to be used as a resting crop and is again being cut and fed to stock. It is estimated that this second crop would make about fifty bushels to the acre. Just as fast as this corn is cut and removed this same land will be planted to blackeyed peas, and in this way three distinct crops will be produced from one piece of land. This fact fully demonstrates what can be done in old Wharton county.

A YOUNG PEAR ORCHARD IN THE TEXAS COAST COUNTRY. A serious mistake was made by sowing oats between the trees.

if one will only rustle. There is no need to hear the cry of hard times here."

COLONY NEWS.

Notes from the Eagle.

—Watermelons are plentiful and the price has got down within reason.

During the week good rains have fallen in various portions of the county.

Two more car loads of brick arrived Tuesday and work on the two new brick buildings will now proceed.

—Banker Funkhouser reports that his business is steadily improving, a sure evidence of the increasing prosperity of this section.

—The ginners have been busy for the past week in getting their machinery in shape to take care of the large cotton crop that is promised.

Cotton is worth ten cents a pound and still climbing. With prospects for a good crop and big prices the farmers of this section ought to feel good.

—We understand that Peter Thompson is trying to arrange for the shipment of a car load of cantaloupes to northern cities. That quantity could be easily secured.

—The quality of hay now being marketed is very fine, and that product is being shipped in great quantities. El Campo is easily the leading hay market in South Texas.

—Owing to the heavy passenger business over this route it has been impossible for the officials of the N. Y. T. & M. railroad to furnish cars for the usual excursion parties. They expect this car famine to end in a few days.

GROWING PECANS BETTER THAN LIFE INSURANCE.

"About fifteen years ago a life insurance agent asked me to insure my life," said S. H. James, of Louisiana, in the Cotton Planter's Journal. "'No,' said I, 'I will plant me a large pecan grove, and that shall be my life insurance. The yearly premiums shall go toward the cultivation and care of the grove, and I shall get my returns while still alive, and leave to my heirs the most valuable piece of property in the state.' He laughed at me. Still, I planted my grove in the lowlands of Louisiana, bought the finest seed to be had, gave the trees good attention from the start, and already I am getting fair interest on my investment. I am now forty-two years old this month, and my grove is fifteen years old. The trees came into bearing at nine years and each year now the yield gets more and more valuable. In five more years, if I am alive, I can afford to live like a prince, and when I write about pecans it will no longer be from Mound, La. The insurance agent who laughed at me committed suicide several years ago, otherwise I might now afford to laugh at him. My plan of life insurance was a perfect success, as all now know, for I not only get good returns during my life but my heirs will get the principal when I die.

"Every young man or middle aged man should plant some grove of trees while young that will give him good returns in old age. The ordinary staples are so hard and expensive to produce, and the market is so often overstocked, that there is not often much profit in them. The old people cannot afford to toil as young ones do. Especially should men with young children plan far ahead. They should plant trees that will come into bearing in the years to come. This plan is in more general use in the old countries of Europe, where men plan for fifty years ahead for the improvement of their estates, and it is rapidly getting to be more the case in this country.

"Several varieties of trees could be profitably planted for this purpose. They must be hardy, long-lived and suited to the climate in which they are planted. The apple, the black walnut (for its wood) and the pecan stand out foremost among these. In rare cases and localities the orange, lemon, English walnut and almond would do, but none of these first-mentioned will do in our portion of the South; in fact the only tree that is suited for that purpose is the pecan. They have everything in their favor, and the only one thing against them is the time necessary to bring a grove into bearing. The pecan is the best, because the nuts are the finest of all nuts, and sell for the highest prices in the big cities. Of course, I speak of the large improved varieties. The little, wild ones are scarcely marketable. Then the pecan is not killed by overflow, is not subject to any form of blight or disease, and but few insects prey upon them, and all of these are easily handled. After you once get your grove into bearing, there is no expense for cultivation or care. All you have to do is to pick the pecans up, put them in barrels and ship them. How different from cotton!

"Where large pecans are planted you get a large proportion of trees bearing large fine nuts. A few trees will bear inferior nuts, and these you can top and bud at any time before they get fifteen years old, and change into fine trees. It is not necessary for one to be young to plant a pecan grove in order to get returns from it.

"My mother was fifty-three years old when my grove was planted, and she now can afford comforts which she could not otherwise have had. In closing, let me give the reader one warning: Do not expect your grove to take care of itself while little. You must cultivate it and attend to it, otherwise it will not thrive. Cotton is the best thing to plant in a pecan grove. Cotton is nearly always well-cultivated, and the pecans get the benefit. I never knew an old man in my life who, upon discussing the pecan question, did not express a regret that he had not planted a pecan grove in his youth, so that it might take care of him in his old age. This, at least, will not be one of my regrets when I am old."

GOOD WORK OF THE BEES.

The entomologist of the State University of Kansas contributes an article to the annual report of the State Board of Horticulture of Colorado, in which he mentions many insects that are enemies of the fruit grower, but he also notes some friends, and among them thus mentions the honey bee:

"Let us note a friend, the honey-bee, which visits orchard, vineyard, strawberries, blackberries and raspberries, and brings about great results. It was formerly supposed that plants fertilized themselves, but it has been more recently shown that many plants are so constructed as to prevent self-fertilization. Nature has so constructed the plant itself that it is impossible in some cases for the pollen of its own anthers to fall upon the stigma of its own ovary, but the stigma is fertile to pollen brought from other flowers of the same species. It is the intention of nature that insects shall carry the pollen.

"During my field-work this season I had occasion to spend a short time in the vicinity of Rocky Ford with Senator Swink, who is not only known to you but to us who live outside of your State. He has been closely identified with the melon growing interest of the Arkansas Valley in this State. Senator Swink noticed that the first blossoms on the melon-vines, that set, did not bear fruit, but that with the second or third blossoms there came a little wild bee to the blossoms, and with its coming came melons also. Now Senator Swink reasoned to himself if that little bee can bring fruit to the second blossom, why not secure returns from the first blossoms. He distributed hives of bees among his melon fields and these bees have not only been fertilizers of melon blossoms, doubling the average yield, but the bees have furnished honey which [illegible] as many of us know who have visited [illegible] Colorado horticultural experiments.

"Be sure that there are sufficient bees in the neighborhood, or at least within two or three miles, to insure properly the blossoms. When possible, endeavor to favor the bees by selecting a sheltered situation for the orchard, or by planting windbreaks.

American Fruit and Vegetable Journal Colony.

Do you want a home in the Sunny South, in a mild climate [illegible] where the pleasant summer, tempered by the mild Gulf breeze, continues the year round, with a brief winter [illegible]?

Do you want rich land that will produce all corn, cotton, sugar cane, fruit, vegetables, or luxuriant grass for stock growing?

Do you want to buy land on long time and easy payments in a healthful climate where there are already good schools and churches, a colony of northern people?

Then join the American Fruit and Vegetable Journal's El Campo Colony, located [illegible] Southern Pacific railroad, in the [illegible] Jackson, Wharton and Matagorda counties of Texas, 70 miles southwest of Houston, [illegible] population, nearly 100 miles from Galveston, the largest seaport of [illegible] and about 40 miles north of the Gulf coast.

This colony is not an experiment, since it is now six years old, with many improved farms which have produced good crops, proving the [illegible] of the climate and the fertility of the soil. The colony town, El Campo, has already attained a population of 1,000.

Fruit does well, particularly peaches, pears, plums, apricots and strawberries as well as vegetables, besides being from four to six weeks earlier than California.

The American Fruit and Vegetable Journal has secured large tracts of land in this favored section for the benefit of its homeseekers. This will provide a farm of forty acres for each person. Larger or smaller tracts can be secured if desired.

The terms of sale will be one-eighth cash, the remainder in seven annual payments, with interest at the rate of seven per cent per annum.

While land in California with nearly the same climate, producing similar crops, yet [illegible] farther away from the great markets of the East and North, [illegible] from $100 to $500 per acre, [illegible] is offered for a limited time at prices ranging from $15 to $25 per acre.

A copy of the American Fruit and Vegetable Journal will be sent [illegible] for the remainder of this year [illegible] ten cents and [illegible] names and addresses of [illegible] persons who [illegible] be interested [illegible] the [illegible]

[illegible] address [illegible] American Fruit and Vegetable Journal, [illegible] Chicago.

STRAWBERRY CULTURE—MIDSUMMER.

By O. W. Blacknall, Kittrell, N. C.

For American Fruit and Vegetable Journal.

There are two vital points in strawberry culture at this season—the prompt destruction of weeds and grass and the conservation of moisture. Fortunately both of these can be achieved by one and the same means—two birds killed by one stone, as it were.

Frequent and shallow culture is the means. This we accomplish by means of a small three-tooth horse cultivator and light hand hoes. The cultivator is run down the middle once or twice as may be necessary to stir the soil well within a reasonable distance of the plants. Up to about July 15th we plow within six inches of the plants, using a small tooth one inch wide on the side of the cultivator next to the plants. This small tooth cuts not over an inch and a half deep and throws no dirt on the plants. Later, as the plants get older and larger, we drop back a little farther with the plow.

The strip around the plants that the cultivator does not reach we stir with hand hoes, cultivating very shallow just around the plants and a little deeper farther off.

We make it a rule to cultivate this way every two weeks. Timely done such cultivation is rapid and inexpensive. It is when cultivation is delayed and grass and weeds intrench themselves that arduous and expensive work is necessary. In my yellow days I have had crab grass get such dominion over a field of matted rows that it cost nearly as much to subdue it as it should have cost to hoe that field all summer. The time to kill grass is before it comes. Crab grass, the great foe of the Southern strawberry grower, has the lives of a cat, once that it launches well. There is a saying among North Carolina farmers that you can't kill crab grass in August. This is in the main true. This grass launches if allowed to get its growth, which it does in August. Kill it resembles a crab, hence the reason.

In August the sun power weakens, heavy dews increase and showers are heavier, or at least more lasting in their effects than earlier summer. Under these conditions crab grass is almost invulnerable to any force that persuading agriculture can bring against it.

I have in my time witnessed some exceedingly humorous battles of behind-hand growers against this formidable foe. First would come one or two desperate attempts to smother, by means of a turning plow, the huge launches as they waxed and grew among the berries. This failing on onslaught with hoes would follow, in which the launches were dug, chopped, belabored and shaken without hurry but without avail. Harrowing was arrayed but simply to pile the grass, draw earth on it and give it a fresh start. Then comes another charge and belaboring with the hoes. Thus varying his modes of onslaught the belated grower load up the battle till driven to surrender and to have the plants to their fate. Now and then I have known a plucky, brave fellow to finally lug the grass bodily from the field and leave it to grow in the road and along the fence corners. One-tenth of the labor done in time would have killed the grass before it came.

And, as before intimated, all this cultivation is worth all it costs as a conserver of moisture. In fact, weeds and grass, in that they force us to give the culture, are really blessings in disguise.

PROTECTING BIRDS AND GAME IN ENGLAND.

The bird and game laws of the United States are being very favorably considered by other nations, particularly by England and France.

Societies are considering the matter in England, and are urging the enactment of laws that "will prohibit the destruction of all birds and their eggs during the breeding season." A writer in the London Times mentions a decision of a justice, wherein he sets forth the fact that wild animals are not property. Under this ruling two flying squirrels that a man had caged and tamed were not recoverable, while the thief went unpunished because he had been thoughtful enough not to take the cage with him. An attempt was made to show that the thief had damaged the cage in taking the squirrels, but that plea did not hold. It is also complained that, as in the United States, the authorities are lax in the enforcement of game laws. There is a strong movement in favor of a law similar to the Lacey act recently passed by Congress. It is observed that the French press is discussing the same measure, and the Lacey act may possibly become a model in game protective legislation.

GROWING CHINA BERRY TREES VERY PROFITABLE.

Remarkable results have been made known by the prominent South Carolina agriculturist, W. H. Woods, regarding his actual experience and observation in growing China berry trees. He thus states his views in substance in a letter to the Charleston News and Courier:

"He is enthusiastic over its value for railroad ties, inside housework, furniture, and mothproof chests and closets, because of its durability, peculiar freedom from the attacks of insects, and the great beauty of the wood when polished. He declares it next in value to the black walnut, and worth from $50 to $75 per 1,000 feet; that it will grow on any land that has drainage; that the whole cost of planting and caring for a crop of them will not exceed the cost of one cotton crop on the same land, and when the trees are removed 'the land will be worth two or three times as much for agricultural purposes as before.' A hundred acres, he says, will produce in ten years from 50,000 to 100,000 trees, of sufficient value to make a snug fortune.' The News and Courier, which says 'they are safer than peach trees, and pay better, on the whole than pecans,' urges the South Carolina growers to try them."

KANSAS SURPRISES.

Kansas never does any thing by halves. It is generally a record-breaker or more. This year she will have, it is estimated, 85,000,000 bushels of wheat, 4,000,000 bushels of apples, and corn to burn. A few years ago she gave 82,000 majority for Harrison for President and the next election was carried by the Populists. Bad crops, mortgages and hard times were all the cry one year, while the next the railroads could not build, rent or borrow cars enough to haul off the crops.

Only a few years ago Kansas was eating Missouri and even New York apples. Now the Kansas apple is pronounced one of the best and is being shipped even to Europe, while some of the largest apple orchards in the United States are in eastern Kansas: Hall of Judge Wellhouse alone covering 1,100 acres, with several others of 800 acres each. The Kansas peach and apricot have not made much of a noise, yet in color, flavor and quality, they are like the Kansas girl—blushy, sweet and hard to beat. Truly Kansas is a wonder, a land of sunshine and surprises.

A GOOD ACT.

A number of Georgia peach growers united in contributing several hundred crates or a car load of their famous luscious peaches for the benefit of the Georgia Infirmary, located at Jonson, Ga. The railroad and express company carried the fruit free, and the New York Fruit Auction Company gave its services. The car was sold at auction, bringing nearly $600.

The Industrial Home is for the benefit of the state's destitute white children.

NEW GRAPES.

Of the many grapes originated or found by T. V. Munson, none are so well known as American, Carman, Cold Coin, Rontinel and Elvicand.

Mr. Munson has sent out hundreds of new varieties of grapes, yet only a few have been fairly tested in the northern states. In some localities the Antoyen and Brilliant surpass every variety planted. Mr. Munson deserves great credit for his labor in viticulture.

The Southwest, in speaking on this subject, spoke of the McPike grape introduced by Silas Wilson, it said: Mr. Wilson is one of the most prominent nurserymen in the United States and has served two terms as president of the National Association of Nurserymen. Several years ago he became the owner of a new variety of grape—the McPike. This grape was awarded the Wilder medal by the American Pomological Society and has been awarded first prizes at all fairs at which it has been exhibited. It is the largest grape of the Labrusca family grown. Mr. Wilson has been pushing it for a number of years, but has not yet sold enough vines to pay expenses.

DRYING APRICOTS IN CALIFORNIA.

There is an upland valley in California where, at a certain season of the year, the bare ground is golden as far as the eye can see—a blaze of yellow and dazzling color like that of a vast field of poppies. So states the Commercial Advertiser. But this yellow carpet is composed not of flowers, but of apricots drying. The valley, which is so high in the mountains and so bare that almost no dew falls there, is the home of the apricot harvesters for a score of miles about. For all but a few weeks during the year the place is lonely and quiet. Then of a sudden a small army invades it a jaggedly crew of laborers, Mexicans, Swedes, Chinese. A village of tents and huts springs up.

Flat cars run all day up and down the mountain, bringing the ripe apricots. And these are slid on trays into the long sheds

where the people stand at work—men, women and children, each with a tag bearing a number about the neck and a sharp knife in the hand. If it is hot out there where the indigo sky burns in fierce rivalry of color with the spreading orange, it is hotter in the sheds, and the smell of the apricots and of the piles of stones is overpowering. The work people wear no fine clothes as allowed; their necks are bare and their sleeves rolled to the shoulder. The white, thick-muscled son of a Scandinavian laborer moves in unison with the lithe, swarthy, hairy form of the Mexican next him; next is an arm shrunk of yellow skin and bone, tattooed, with a green jade bracelet sliding up and down it. It looks scarcely human—in fact, it is the arm of a Chinaman.

PINEAPPLES.

This excellent fruit finds its home in but one state of the union, that is Florida. Its native country is said to be South America and possibly some of the West India islands, where climate and soil are conducive to its growth. Pineapples do not bear long shipments, or even long keeping, very well, says Food and Drink, if they are allowed to approach ripeness before being gathered; while if plucked too soon they are of inferior flavor and unsatisfactory in condition.

From a hygienic standpoint it is doubtful if we have in the entire vegetable kingdom a more healthful fruit than the pineapple.

The sharp, penetrating, but wholly palatable acid of the juice has most valuable remedial qualities, and is especially efficacious in clearing the mouth, throat and stomach of morbid disorder. At the same time it stimulates digestion, and thus encourages the system to correct itself, without the aid of drugs and dosing. Many of nature's products—fruits and nuts—do this, but none in more marked degree or more efficiently than the pineapple.

TO PEACH GROWERS.

The importance of the peach industry and the evident need of a catalogue with full description of the varieties grown in America leads me to ask the cooperation of peach growers in a systematic study of the subject. Samples consisting three or four specimens of each variety of ripe fruit, together with a twig and a few leaves are necessary in order to carry on the work. Such samples will be greatly appreciated if sent to the undersigned. They should be accompanied by a concise history and description of the tree from which they were taken and a report of the success or failure of each variety in the locality for a number of years back.

H. C. Irish,
Mo. Botanical Garden, St. Louis, Mo.

THE BEST GARDEN TOOL.

American Fruit and Vegetable Journal:

If the question were asked, what is the best garden tool, many would answer without hesitation the hoe. With these friends of the hoe the writer does not agree, because the hoe is the best garden tool only to those who do not realize that prevention is better than cure. The writer has in mind a garden consisting of about one-fourth of an acre in size that was kept perfectly free from weeds without the use of hoes or hoe except in preparing the soil and sowing the seed.

Rows were made considerably closer than if a horse was employed. As soon as seed began to come up the surface was carefully stirred with a common garden rake; while plants were small the rake was run over as well as between the rows, without injury to the plant. This tool was used after every rain as soon as soil was dry enough. A man can get over more ground in an hour with a rake than he could in a day with a hoe.

The weeds are killed at the time of germination and thus are not allowed to get a foothold. Another advantage of the rake is that it furnishes a mulch of loose, mellow earth that is greatly beneficial to plant growth.

Lynch B. Field.
Alton, Ill.

AMUSING SPEECH OF COL. FULKERSON.

At the recent meeting of the Illinois State Horticultural Society Col. Fulkerson, president of the state board of agriculture was called on for a speech, when he thus responded:

Ladies and Gentlemen: I am very well aware that when a man is talking to people that know more than he does about a subject, he had better cut his speech short. I will confess that this "fine air," horticulture, overcomes me with perfect awe. When I hear horticulturists talking about the bitkide, full of rocks, that will grow this and that, when I hear of their spraying with liquid lightning to kill things that are too little to hear or see, then I think I had better skip modern horticulture. I think I had better say something about ancient horticulture. When I was a boy there was no such thing known as a "budded peach;" if a farmer wanted a peach tree, he got a peach seed and planted it. He knew when he planted apples, he would get a tree that would bear apples sour enough and bitter enough to make the pigs squeal. Horticulture is much older than anything else. God made a horticulturist and put him in the Garden of Eden. He said, "Eat all the good fruit but let the cider apple alone." He said unto them both, "Eat all the good fruit but let that one apple alone."

Now you see, Adam had a corner on all the good things of the earth; he had a good wife and as far as we know he had no measles, mumps, or whooping cough in his family. But Adam's wife tempted him you know, and he ate the apple. So, as you all remember, that angel came and shut him out of the garden; and that was the end of the first horticultural venture, and I say it was a flat failure. After Adam's family had been put out of the Garden of Eden they were obliged to live strictly on a meat diet and then all became bilious. One of the boys got more bilious than the others and picked up a club and killed his brother Abel. The Lord taught them how to farm, to raise wheat and barley, and He gave them some clubs and fig trees, and as soon as they got all those things they began to improve; the more civilized they became, the more attention they paid to horticulture and agriculture, and the first century stands out in bold relief as the wisest, most intelligent century the world has ever known. In this instance horticulture was a grand success because it went hand in hand with agriculture. We ought to take warning by that. A man cannot be a well rounded farmer unless he raises all the fruits his family can use the year round, and a man cannot be a first-class horticulturist who is not big enough and broad enough to know that the man who raises small fruits is a higher friend of horticulture than the farmer who raises his family on hogs and hominy.

Adam was the greatest authority on horticulture and I want you to decide whether it was a cider apple or Ben Davis that he raised.

The Sycamore (Ill.) canning factory is meeting with a heavy loss this year in having large fields of peas. An insect called the pea louse has got in its appearance lately and will destroy all of the later pea crop. The insect, which feeds upon the leaves, is very small and multiplies so fast that a leaf is covered by the offspring of a single female within a day.

A severe storm passed through the Michigan fruit belt near St. Joseph, which is said to have destroyed fifteen cows as well as blowing off the fruit from many of the trees left standing, yet Michigan can afford to have several more storms and then have plenty of fruit.

This Elegant Sterling Silver Spoon
1 doz. $7
1-2 dz. $3.50

Express Charges Prepaid
When sent C. O. D. inclose 50 cents for express charges.

Write for Catalogue and Prices on

Watches, Clocks, Chains,

Scarf-Pins, Rings and Silverware

THE DE WOLF JEWELRY CO.,
713 Masonic Temple, CHICAGO

CALIFORNIA APPLES ON THE ENGLISH MARKET.

The Pajaronian says: A gentleman was in this city last week who at times during the past winter attended the sales of Pajaro valley apples at Covent Garden, London. He witnessed the thorough examination of boxes by the buyers before a sale—the sides of the boxes being taken off, the apples unwrapped and the fruit closely examined. If the apples show poor grading or decay in fact, if they are not up to a high standard all of the boxes bearing the brand of the examined boxes are sold at shaded prices. One box of bad apples spoils the sale of an entire shipment. Then there is a guarantee of quality with each sale, and if the dealers who buy at auction or from jobbers find that the apples are not up to the sample boxes shown they return their purchases to the auction firm and the latter has to refund the money paid. Apples are sold in Great Britain for what they are, and they have to be the best to bring good prices. If we are to retain the English market for our apples the greatest care possible must be taken in grading and packing. It is of utmost interest to orchardists and packers to see that it is done.

NEBRASKA WANTS NEW OR IMPROVED VARIETIES OF FRUIT.

There is great need for more varieties of fruit adapted to the climate of Nebraska. More varieties of peaches which are hardy, have good quality, yield well, etc., are wanted. Raspberries, blackberries and grapes, which will stand the hot, dry summers and cold, dry winters of Nebraska, are wanted. There is need for new varieties of apples which yield well, have good quality, and do not blight badly; and especially for winter apples having good keeping quality. Valuable new varieties of many other fruits also are being sought for. Whenever a seedling fruit having any of the qualities noted above, or any other valuable quality, is found, the facts should be made known. The Horticulturist of the Experiment Station desires to know of such fruits, that they may be tested on the University farm.

There are many wild fruits in Nebraska which should be tested under cultivation. Among these are the wild plum, wild black cherry, etc. The wild fruits, as a rule, are perfectly hardy, but they often lack size and quality. Some of them, however, vary greatly in size, quality and abundance of fruit, thus affording a chance for selection. Whenever any wild fruit is found to be better in any respect than the others of its kind, it should be saved with care. The Horticulturist would appreciate most highly any information regarding such wild plants. Address,

Prof. R. A. Emerson,
State University, Lincoln, Neb.

THE CARMAN PEACH.

"The Carman peach," says J. H. Hale, "is going to be the best American variety, in quality and appearance it is A1."

"Is it right to call it a white Elberta?"

"No, because it is not the shape of the Elberta. It is larger and rounder and does not have so much of a pointed tip. Its white color and red cheek give it a beautiful appearance, and its flavor is A1."

"How about its shipping qualities? Some people say that it is made of leather so far as its ability to stand shipping is concerned."

"It cannot be called a first-class shipper. It would rank with Mountain Rose in this respect. In some dry seasons, where it has grown to perfection, and handled just right, it would come through in good condition. There is no doubt that it is going to prove an acquisition. I fruited it in Connecticut when there were scarcely any other varieties in bearing. I have 4,000 trees in Georgia now that will give a fair crop this year."

IMPORTANT FEATURES OF THE PAN-AMERICAN EXPOSITION BRIEFLY PRESENTED.

An outline of the Exposition is given by American Garden in this manner:

Resources for the purpose of the Exposition, $5,500,000.

Site, north part of city, mile long, half as wide, 350 acres.

Grounds include 133 acres beautiful park lands and lakelets.

Over twenty large buildings and massive architectural features.

An artistic arrangement and a setting of unexampled beauty.

Brilliant architectural effects prominent in all buildings.

Fountains and flowers, trees and shrubbery, canals and lakes.

Lawns and gardens vivid with color throughout the grounds.

Many states and countries now enrolled for extensive exhibits.

Fifteen acres set apart for state and foreign buildings.

Special exhibits to be installed in many artistic structures.

Twenty acres devoted to novel entertainments in the "Midway."

Most novel pleasure ground man's ingenuity has yet devised.

Midway attractions carefully selected from the many offered.

High class athletic contests a feature of the Exposition.

Exhibitions of skill and prowess most elaborate given in America.

Stadium for sports covers ten acres; seats 25,000 people.

A grand court 5,400 feet long, with transverse court, 1,700 feet.

A great esplanade capable of accommodating 250,000 people.

Beautiful music gardens for entertaining vast assemblages.

Federal Government to spend $500,000 on its exhibits.

Exhibits from the Philippines, Hawaii and Porto Rico.

Extensive horticultural and floricultural exhibits.

Floral display, showing over 500 beds of popular flowers.

Live stock exhibit covering ten acres, embracing all classes.

Agricultural building to be 500 feet long, 150 feet wide.

Most elaborate electrical exposition ever contemplated.

Court of the Fountains lighted with 100,000 electric lamps.

Tower for electric display and observation, 350 feet high.

Electricity building, 500 by 150 feet, for electric appliances.

Everything new and wonderful in electricity to be shown.

Niagara Falls power, electrically applied, to run machinery.

Complete display of electrical vehicles to be made.

The uses of electricity in the arts to be demonstrated.

Methods of employing electricity in the household to be shown.

Electric boats and other craft to ply upon the grand canal.

Largest chime of bells in America to be ring electrically.

Machinery and Transportation Building to be 560 feet by 380 feet.

Great building, 500 by 350 feet, devoted to manufactures.

New York State to erect a large permanent historical building.

A magnificent permanent art gallery to be a prominent feature.

Electric horizontal railway, double track, three miles long.

All steam railways have access to the Exposition station.

City and suburban electric car lines reach grounds on two sides.

Five cent fare to the most remote points in city limits.

Niagara Falls only thirty minutes away by steam railway.

Electric cars to Niagara Falls and through Niagara Gorge.

Greatest electric power plant in the world at Falls, open to all.

Famous Chautauqua Summer School few miles from Buffalo.

Many charming lake and river resorts close by the city.

"APPLE RAISING FOR PROFIT."

In an address before the Massachusetts Horticultural Society on the above subject, Mr. J. H. Hale spoke as follows:

"New England, as regards soil and climate, is better suited to the apple than other sections of the country. We can grow apples of finer color, flavor and texture in New England than anywhere else. The first thing necessary beyond soil and climate is to have good trees with perfect foliage from the beginning to the end of the season. Frequent and thorough tillage is necessary. Trees must have room, must have intelligent feeding. They need potash and phosphoric acid, with a moderate amount of nitrogen. Fungous growth will attack even the best cared for trees in some extent, so that spraying is essential.

"Let us first consider our old orchards. What can we do with them? Old trees should be pruned, and this should be done by a man of experience. Cut out all dead wood and some small branches. Don't try to do it all in one year; take two or three. If you do not want to plow your orchard, put on a top dressing and harrow. But if your orchard is to be devoted to apples alone, plow it and put on fertilizers. Scrape off all old, rough bark, and spray with a potash wash while the trees are dormant. Carry on the ordinary summer spraying for the codling moth, etc. If your land be rocky or rough, it may be mulched with any old material that is available; anything that will kill and the sod—but ploughing is better. You may pasture swine or sheep in your orchard if you wish. I know of a man who has used an orchard of eight acres as a pasture for hens, and he is 50 per cent. ahead of the former owner, who made the same orchard a bayfield. After cultivating a year or two, it will be necessary to thin out the fruit.

You cannot have good fruit without thinning. If a young tree attempts to bear ten apples, pick off eight and leave only two to ripen to perfection, and you will

have two fine specimens. The talk of an "off year" is nonsense. There should be no "off year." When the climatic conditions are such that the crop is ruined, the next year the trees will be so full that the fruit cannot ripen and at the same time form buds for the following year. By thinning off 75 to 80 per cent, every year you can bring the tree into the habit of annual bearing. Watch your trees closely, and as soon as the apples are ripe pick them, even if it be August or September. Pack them at once in the barrels or boxes in which they are to be shipped, and place where there will be a good, even temperature. Grade according to size and pack honestly from top to bottom."

HOW TO STORE ONIONS FOR WINTER.

The following method is given by a contributor to Farm and Home.

The pools of onions among good as dead when the onions are really ripe and ready to be taken from the ground and stored for the winter. The tops then need no trimming.

Those who make a business of growing onions for market on a large scale, and arrange to properly store and keep them during winter, have in many cases in these days houses specially built for the purpose.

The idea in constructing houses of this class is to secure ventilation and a dry atmosphere, to come as near as possible in getting a temperature just above the freezing point, and to maintain this temperature steadily. Where the purpose is to keep onions through the winter for home use only, the planning should be as closely as possible to this mark.

Even in the case of those who make considerable business of storing onions, "the winter care of them is always attended with more or less loss." Regular onion growers understand, but, that "it is absolutely essential for successful winter storing that the bulbs should be well matured, thoroughly cured, not bruised and in a perfectly dormant state. Most growers prefer topping the onions before storing. Sheep shears can be used to advantage in this work, leaving about an inch of the top above the bulb."

In the matter of range of temperature, it is held that "the temperature of the bins or places where the onions are wintered should not rise above 32 degrees or below 15 degrees until spring. The severe freezing or successive freezing and thawing will injure the bulbs. Small quantities may be stored in pits with satisfactory results. Select a well-drained location on which to place the onions in piles. Cover them with hay or straw to the depth of about twelve inches and then add a layer of earth and roof the mound with boards. It is essential that the bulbs be thoroughly protected from water, which causes decay.

"When the cold storage process is followed the onions are stored on floors or in bins, barrels, boxes or crates. The temperature must never quite reach the freezing point, but should not rise more than 2 or 3 degrees above it. Free ventilation is essential in bright days, when the cold is not too severe and the atmosphere is dry. Cellars will sometimes answer the purpose, but they usually contain too much moisture. Barns and well-constructed outbuildings are frequently frost-proof and will preserve the bulbs in perfect condition."

We thus have most, if not all, of the main essentials in keeping onions during the winter. Onions are, or should be, grown by all farmers; and there are few farms without places immediately suitable, or that can easily be made suitable for the winter care of enough onions for home supplies.

ADAPTING PLANTS TO THE CLIMATE.

According to the views of the scientist Dolorter, the term acclimatization is often not understood and may be wrongly used. His views, as stated by the Fruit Grower, are that by the acclimatization of a plant is understood its complete adaptation to new conditions, brought about by corresponding changes in its organization. Nevertheless, acclimatization can be considered as complete only in those cases where the introduced plant proves capable of completing under the new climatic conditions its full cycle of development, i. e., not only of maintaining its own existence but of reproducing vigorous descendants. Such requirements, it is claimed, are very rarely fulfilled. For example, cucumbers, watermelons and cantaloupes whose home is in southern Asia and northern Africa, and which have been for a long time cultivated in Europe, reach full maturity and produce healthy seed, but only with the aid of man. When left to themselves they invariably perish, the fruit rotting away in a rainy fall and the seasonal spring sprouts are killed by the frosts. In the case of "naturalized" plants, although often coming from distant regions, they are introduced into countries with climatic conditions similar to those of their native land.

Real acclimatization is a very rare thing. In most cases reported of the rapid acclimatization of a plant one of two things has taken place: either the plant has been acclimatized or the acclimatization is not complete, the newly acclimated plant not being as capable of producing vigorous offspring.

Artificial acclimatization is only possible within very narrow limits. All that can be accomplished is to move a plant a little way beyond its climatic boundaries to some what hardiness or shorten the period of vegetation of an annual plant or to adapt a plant from a more humid climate to a drier one and conversely. This can be accomplished only by means of the gradual careful and more or less protracted selection of the more enduring individuals.

Montana promises a good apple crop. It is wonderful what growths and fruit the climates of Montana, Idaho, Colorado, Utah and Washington are producing. The new trees and vines planted there each year make the fruit crop of these new states each year more likely to be a great surprise.

The Arkansas crop report of July 21, says: "Peach, apple and plum reports from all stations in Missouri, Arkansas and Louisiana indicate a better crop than for years; all doing well, but very few stations will have any for shipment, outside of small quantities by express."

The largest crop of figs ever produced is the crop from California. Figs are now in the market, offering from 60 to 70 cents per dozen boxes.

The Wisconsin blackberry crop is not up to last year's product; too much cold weather after blossoming.

Many Michigan peach growers are reported to have sold their crop on the trees at fair prices.

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WANTED—Head gardener's position. English age 34, 18 years' practical experience in all branches of gardening; has first class references. Address A. C., American Fruit and Vegetable Journal, Chicago.

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In sunny Southern Kansas, the land of good roads, healthful climate, abundance of good water, numerous railroads, superior markets, good schools and churches.

This orchard consists of about 4500 first class trees, nearly all winter apples.

It is located on 160 acres of loam, black loam, limestone soil, underlaid with a clay subsoil, and that resting on a limestone stratum, thus making a superior location, well drained and slightly. Abundance of the best water can be found from ten to sixty feet.

The orchard is thirty two miles east of the city of Wichita, on an excellent public road, and only a few rods from the Atchison, Topeka & Santa Fe R. R. switch.

With the exception of a few trees, they are nearly all 12 to 14 years of age. The whole orchard is in a very healthful and vigorous condition.

The varieties are well assorted and of only the best commercial kinds. The house is a three story frame cottage. Title is good and market excellent.

The city of El Dorado, located on the banks of the beautiful Walnut river, 10 miles south, has 3 railroads, a population of 3,500 and is the capital of Butler, the largest county of Kansas.

The owner has other business.

Address J., care American Fruit and Vegetable Journal, 713 Masonic Temple, Chicago.

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To the 6th	200	To the 16th	25		
To the 7th	100	To the 17th	20		
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To each chance to win the $15,000 first prize or any of the other 999 prizes as announced above send in yearly subscription to the FARM, FIELD AND FIRESIDE MONTHLY, the best illustrated farm monthly in the United States, replete with practical and useful information for everyone, as follows:

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In case of a tie, or that two or more estimates are equally correct, prizes will be divided equally between them.

This contest will close one month before the population has been officially announced by the Director of the United States Census at Washington, D. C., and the Farm, Field and Fireside Monthly will announce the date when the guessing will close.

To aid subscribers in forming their estimate, the Farm, Field and Fireside Monthly furnishes the following data:

Year	Total Population	Increase	Per Ct.	Year	Total Population	Increase	Per Ct.
1780	3,000,000			1810	7,239,881	1,200,197	36
1790	3,929,214	929,214	31	1820	9,638,453	2,398,572	33
1800	5,308,483	1,379,269	35	1830	12,866,020	3,227,567	33
1810	7,239,881	1,931,398	36	1840	17,069,453	4,203,433	33
1820	9,638,453	2,398,572	33	1850	23,191,876	6,122,423	36
1830	12,866,020	3,227,567	33	1860	31,443,321	8,251,445	35
1840	17,069,453	4,203,433	33	1870	38,558,371	7,115,050	22
1850	23,191,876	6,122,423	36	1880	50,155,783	11,597,412	30
1860	31,443,321	8,251,445	35	1890	62,622,250	12,466,467	25
1870	38,558,371	7,115,050	22				
1880	50,155,783	11,597,412	30				
1890	62,622,250	12,466,467	25				

Address Puzzle Dept. FARM, FIELD AND FIRESIDE MONTHLY, 710 Masonic Temple, Chicago.

We club with all papers advertised in this issue, and furnish same with American Fruit and Vegetable Journal.

SEPTEMBER, 1900.

AMERICAN FRUIT AND VEGETABLE JOURNAL

713 MASONIC TEMPLE, CHICAGO, ILL.

A LEMON GROVE AT ORANGEVILLE, CALIFORNIA

The growing of lemons is a pleasant and profitable business where the conditions of soil, climate, transportation and markets are favorable. The United States does not produce near the quantity that it consumes, but imports many thousands of boxes. The last of August 51 car loads were shipped from California alone to the eastern market. The lemon has larger and paler leaves than the orange. The flowers are tinged with red on the outside. There is an Italian variety known as the Sweet Lemon, which is [illegible] very good eating. The United States imports large quantities from southern Europe, as well as Mexico, China and the West Indies.

Editor American Fruit and Vegetable Journal: I have read with interest the copy of the American Fruit and Vegetable Journal which you send. It is a very bright paper and can render valuable service to the industries which it is intended to represent. I hope to be able to send you an occasional note of our work.

E. J. Wickson, Horticulturist.

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Editorial.

Don't fail to read our great offer on Inside Cover Page.

* * *

One hundred and fifty thousand barrels of apples is the estimate placed on the Oswego county, New York, apple crop.

* * *

The Chautauqua, N. Y., grape crop is estimated at 4,000 car loads.

* * *

Prof. Blair, of the Horticultural Department of the Illinois State university, is said to be a strong believer in cultivating an orchard. He has the ground under the trees kept real clean and frequently cultivated. He first plows it up with a common plow, going as close to the tree as possible so as not to injure the tree, while a harrow follows the plow.

* * *

The Rocky Ford cantaloupe crop is reported short owing to the fact that only 1,200 acres have been planted against 8,000 acres grown last year. It is said the farmers have turned their attention to the raising of sugar beets, since a large sugar factory has been erected there this season.

* * *

Texas is coming to the front as a fruit and vegetable producing state. From Jacksonville, Tex., there is a report of shipping over 300 cars of choice peaches, besides the shipments of tomatoes and small fruits. Two canneries and a box factory, it is claimed, have been running in full force.

* * *

The very hot weather of August has seriously damaged the winter apple crop in several sections of the country, causing it to ripen up prematurely as well as drop.

* * *

The market has been well supplied with fruit and vegetables, while prices have been generally low. This has been a great year for those who eat peaches, but poor for the grower.

* * *

It is stated that eight car loads of choice Georgia peaches were shipped to Minneapolis at one time this season that only sold for enough to pay the freight.

* * *

No danger of making the ground too rich for asparagus, says a successful grower.

* * *

Competent authorities claim they can irrigate orchards in the San Jose valley of California, two or three times during the season, at a cost per acre of $6 to $9. Fifteen hundred pumping plants for irrigation purposes are now in operation in that valley.

* * *

South Haven, Mich., shipped out one day in August 50,000 packages of fruit, consisting chiefly of peaches.

* * *

The Georgia peach crop is reported to have fallen short of the estimate from outside. Heavy rains caused the crop to rot badly.

* * *

J. H. Hale, the great peach grower of Georgia, is experimenting with Japanese chestnuts. He has planted ten acres.

* * *

The peach crop of Georgia was so large and the markets of the country over so poor that many car loads, it is said, did not sell for enough to pay freight.

* * *

The Bellflower apples particularly, as well as other varieties of apples, have been seriously injured by the hot weather in California, in the region of Watsonville.

* * *

Pickles are very extensively grown in Lewis county, Missouri, near the town of Monticello. The crop this year is said to be the largest they have ever grown.

* * *

The peach crop of Schuylkill county, Pennsylvania, it is estimated, will reach 75,000 baskets. The crop of the county will bring in $50,000. One farm has 6,000 trees and expects to harvest 17,000 baskets.

* * *

Clay City, Ill., has a new fruit cooperator with a capacity of 500 bushels of apples per day. There are great quantities of apples grown in that part of the state. One orchard not far from Clay City contains 800 acres.

* * *

C. H. Miller, president of the North Georgia Fruit Growers' Association, says that the old red hills of Georgia, that have been so long considered nearly worthless, have been found to be very good for peach growing, as well as apples and pears. He thinks the climate excellent. He has very extensive orchards and has faith in fruit growing in Georgia. There is now said to be growing near Rome, Ga., several peach trees, 100,000 apple trees and of pear trees 25,000.

* * *

The price of canned California Bartlett pears has advanced 25 cents per doz., owing to the difficulty found in obtaining good fruit. Worms have greatly damaged the fruit.

* * *

The experiment station of the Pennsylvania State College is investigating the purity and vitality of the agricultural seeds of Pennsylvania for the state department of agriculture. Many hundred samples of seeds are being received from various points in the state. The work is being conducted by Prof. Geo. C. Butz, with the assistance of Mr. W. H. Thompson of the class of 1899.

* * *

Pears are so plentiful in Oregon that it is stated that the Portland Packing Company are only paying from $12 to $20 per ton. This is probably less than from 30 to 50 cents per bushel.

* * *

The Michigan peach crop has been very large and the fruit choice. The Sept. 7th there were 100,000 baskets sent to the Chicago market of these beautiful, blushing, luscious Michigan peaches.

* * *

A dispatch from Geneva, N. Y., states that grapes never looked better than at the present time. This late in the season they do not fear mildew.

CHOICE BOOKS AS PREMIUMS.

Elsewhere we give a list of excellent books to be used as premiums. We have examined them and found them indeed choice, very practical and just what every farmer, fruit grower or nurseryman needs. These books are useful in by two authors fully abreast of the times and show the results of their research, through study and practical experience. The information contained in these books is not only of great value, but many of them would make as well a first class text book for either school or college purposes, besides being a very readable book for the home. If space permitted we would be pleased to state the merits of each volume, yet on a postal card request we will cheerfully mail a review of the list to any one interested.

PROFESSOR CRAIG GOES TO CORNELL.

Professor John Craig, recently of the department of horticulture, College of Agriculture and Mechanic Arts, Ames, Iowa, has recently been called to the horticultural staff of Cornell University, New York. The American Fruit and Vegetable Journal most heartily unites with his many friends in wishing him great success in his new field of labor, and urgently requests in behalf of our readers that he may continue to contribute to these columns.

A TRIP TO THE SUNNY SOUTH.

On August 7th the editor, wife and Robson Ralph left Chicago at 10 p.m. for a trip to Kansas and Texas. To see the Indian colonization lands was the main object of the journey. At several points at noon rests and on lands along the way were made an account of these visits may be of interest.

As our well equipped Santa Fe train left on schedule time and maintained it, the trip was uneventful until daylight dawned to the rich fields of Missouri, where evidences of peace and plenty were bestowed by the rich grain fields, herds of fat cattle, heavy laden orchards, and great farm buildings, while the people showed thrift and business. The rich fields of the great Missouri River valley were covered with water, but a wonderful harvest.

As the long train climated the approach to the great steel bridge that spans the "Big Muddy," a number of men were stationed to catch a glimpse of both river and bridge. Like of the wonderful river with its wild bars and swirls showing muddy waters could be seen, while the trees skirted the banks for some distance.

Nine years ago we had the pleasure of a trip down this same old Missouri river from Kansas City to St. Louis on the steamer A. L. Mason, one of the three boats built by Jennings City men to navigate the river and revive the commerce of other years. But the bridge [illegible] of the [illegible] boats stopped traffic on the great part of the river and [illegible] the destiny of the [illegible] built for this trade, and thus put an end to the dream of Kansas City to ever have a great

river transportation, unless inventive genius can build a light draught vessel that will almost float upon the surface of the river, or rather, "draw but a foot or two of water."

Kansas City, with its bills higher than Chicago sky scrapers, was reached at 10 a. m. We were soon speeding up the wonderfully fertile valley of the Kaw or Kansas river, where the farms and orchards were as thrifty and beautiful as any we had seen.

A Stop at Lawrence.

Arriving at old, historic Lawrence, the town that was sacked by Quantrell's guerrilla band in the time of the war of the rebellion, we were driven 2½ miles into the country to the home of Mr. A. H. Griesa, the popular nurseryman, who has brought forth the famous Kansas and Cardinal raspberries, the Catalpa Bunger, and who is still zealously laboring to bring forth other new varieties of strawberries and raspberries.

Words simply fail us as we attempt to describe the beautiful rolling farms, with great fields so richly fattened with unsurpassed crops, the shaded drives, good farm buildings, large, healthy fattened orchards, with prosperity at every view, while in the distance, on a commanding hill, towered the many good buildings of the Kansas State University.

Mr. Griesa's Nursery and Orchard.

Arriving at Mr. Griesa's home, which was a little Eden within itself, surrounded as it is with trees, shrubs, vines, fruits and flowers, we were driven to the orchard, where we could eat the choicest peaches, apples, grapes and berries.

As we cleared the quantities of fruit wasting and rotting under the trees, we could not help but think of the many poor in the great cities starving for what is going to waste in the country.

Such quality and variety of fruit as Mr. Griesa produces was no less a surprise than what he was accomplishing in his nurseries. His famous Kansas and Cardinal raspberry vines, the two superior varieties before mentioned, that he has developed, were grown in large plats.

Hundreds of young seedling strawberry and raspberry plants were being carefully watched and cultivated, to see if some new and choice variety might not be obtained, while back of the very seed, Mr. Griesa could relate a history of patient work in pollination. Thousands of select seeds may be planted only to have a few germinate and grow, while out of the few that do grow it is only now and then that a specimen may be found that will prove of enough merit to continue its propagation. It is, therefore, expensive and slow work, besides requiring the greatest care and patience. The work that Mr. Griesa is performing is of great value to the country.

It was indeed a pleasure to view his ornamental stock, many kinds of which were yet indeed with flowers, while we took no little interest in learning how he propagated the Catalpa Bunger.

The Home.

From the orchard and nursery we went to the "vine clad cottage," set in a well-arranged lawn and enclosed with a great variety of shade trees. Here Mr. Griesa had spared nothing for the comfort of the fair ones who kept the home. A wind mill drove a pump that forced water into a great air pressure reservoir, which furnished an excellent supply for kitchen, bath and general use, with hot and cold water in the kitchen and bath.

The house was heated with a good steam furnace. Telephone connections were made with Lawrence. Here was an ideal home, surrounded by all the comforts of this rich country, with the conveniences of a city house. How pleasantly we were entertained by Mr. Griesa, his sister and niece, we can scarcely describe, yet we were sadly reminded by many tokens of the faithful companion, who many months before had been called to cross the great river, and who for years had aided in building up this beautiful home.

After a most excellent supper of the first fruits of the land, we all chatted merrily on the lawn, until "The lovely stars, the forerunners of the angels, blossomed one by one in the infinite meadows of heaven," while a delightful Kansas zephyr cooled the air so refreshingly.

The ride back to Lawrence in catch the 11 p. m. train was interspersed with pleasant conversation, while a never-to-be-forgotten visit passed into a memory.

A Large Orchard.

The following morning we arrived at De Graffe, a little station in Butler county, Kansas, in the midst of the great stock growing section of the wonderful sunflower state.

Here we were met by Mr. J. J. Johnson, with horse and carriage, and conveyed several miles down the famous Walnut valley to his orchard home. We rode past great stock ranches, on which were large herds of choice fat cattle, fine farms, with the heaviest yield of wheat and oats, while the Indian and Kafir corn, millet, cane, grain and alfalfa clover all promised a good crop. Miles and miles of pasture land covered with the excellent blue stem grass stretched away to meet the horizon.

The bright morning, the pure cool air, the excellent roads, and the enchanting views, put us all in the happiest mood, which, coupled with an excellent appetite, prepared us well for our breakfast and a table filled with the choicest products of orchard, garden and farm. The home was in the midst of a large orchard, of perhaps 200 acres or more in extent, located beside the Santa Fe track, a few rods from a branch of the Walnut river, and five miles north of El Dorado, the capital of Butler county, nearly 32 miles east of Wichita and six miles from the Oklahoma and Kansas line.

The Orchard.

The orchard consists chiefly of winter apple trees, with some pear, plum, peach, cherry and crab, with a vineyard of nearly four times. This is what is called a commercial orchard, that is, the fruit is grown for market, while the varieties selected were only those that it was thought would make the best trees and produce the most merchantable and best keeping winter apples. The varieties are chiefly Ben Davis, Missouri Pippin and White Sap. Although Jonathan, Winkler, Romanite, Willow Twig, Rome Beauty, Mahlon Black, and some others may be seen. There are about 10,000 or 12,000 apple trees alone. The orchards are owned by J. P. Thompson, of New York state, T. H. Jones, of Chicago, and J. J. Johnson, of El Dorado. The editor of the American Fruit & Vegetable Journal planned, selected the varieties and directed the planting and management of this orchard. About 2,500 trees are 14 years old, probably 4,500 are 12 years old, while the most of the remainder have been planted from 4 to 10 years. Frost, hail and unknown reasons have prevented any uniform or large crop, yet the owners are hoping that next any year soon the great harvest will come. One good crop should pay all expense of cost and time and should give a reasonable profit.

The fruit thus far produced is of excellent quality and thrive and keeps well.

The markets of western Kansas, Colorado, New Mexico, Oklahoma and Texas are great and good. The prices obtained are frequently much better than east of the Mississippi river.

The insect pests are about the same as elsewhere. The trees this year had made a growth of one to two feet, while the foliage had a good color.

(To be continued.)

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* * *

The San Francisco Chronicle says the prune situation is the all-absorbing topic at San Jose. Leading packers estimate the prune crop of California this year at 15,000,000 pounds, and some go as high as 175,000,000 pounds. Growers are more moderate, and place the state yield at 125,000,000 to 135,000,000 pounds.

* * *

One of our exchanges says that a few acre orange grove in the Riverside valley was recently sold by H. W. Leighton to Charles A. Bailey for the San Francisco Theological Seminary for the sum of $18,000. It was bought as an investment. The grove gave as last year's crop 5,000 boxes of oranges.

* * *

Considerable alarm is felt in the peach country of this state over the great number of trees now affected by the yellows and little peach diseases. Last year's light crop made growers less careful and made it less easy to discover the disease, on account of the absence of fruit. As a result, we are this year getting a double dose, and unless all growers take prompt steps to destroy every diseased tree, their orchards will be short lived.—Michigan paper.

* * *

Athens county (Ohio) fruit-growers will realize about one-third of a crop of peaches this year, taking the yield two years ago as a standard. The orchards this year will produce about 200,000 baskets, or about 80,000 bushels. The average selling price is 50 cents a bushel, and the proceeds of the fruit growers of the county will, therefore, reach $40,000. Two years ago Athens county produced nearly 700,000 baskets, or about 280,000 bushels, valued at $140,000.—Farmer and Dried Fruit Packer.

* * *

A solicitor in a Georgia court relates that he once overheard a conversation between his cook and a nurse, who were discussing a recent funeral of a member of their race, at which there had been a great profusion of flowers. The nurse said: "When I die, don't plant no flowers on my grave, but plant a good old watermelon vine, and when it gets ripe you come dar, and don't you eat it, but jes' bust it on the grave and let dat good old juice dribble down through de ground."—Exchange.

place, and buds placed on these would result in change desired.

On a neighbor's place was a common wild cherry, which was budded with the lovely Japanese double pink-flowered one, Sieboldi, changing it from a fruiting sort of but little value to one of the loveliest trees on his grounds.

The much-admired flowering horsechestnut, of both single and double varieties, are almost altogether produced by budding, the stock used being the common European one, oxyacantha. Of these, Paul's Scarlet is justly admired, but the double and the single rose-colored ones are equally indispensible.

There is no given date for budding. It depends on locality and season. But nurserymen do not usually bud while the sap is in full flow, preferring to do it when it is somewhat on the decline, while still flowing freely enough to permit the bark's being easily lifted to allow insertion of the bud. While shoots are still growing, the bark will lift well, and observing this will be a guide. Plums, pears and cherries do not grow as late as peaches, so need budding earlier. In this vicinity, August sees a good deal of budding accomplished, though September does for peaches.

When buds have taken hold, say in about four weeks, the strings bidding them are to be cut; and in early spring the stocks are cut off just above the bud, that it, the bud, may be the leading one.—Joseph Meehan, in Country Gentleman.

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ILLINOIS STATE HORTICULTURAL SOCIETY.

Information has just been received by President Dunlap that the Illinois State Horticultural Society was awarded another first prize on apples at the Paris Exposition in the competition of Aug. 22. The varieties and contributors were as follows:

Ben Davis—A. Caldwell, Briggsville, Ill.
Ben Davis—W. A. Young, Butler, Ill.
Gilpin—M. A. Babtwin, Jacksonville, Ill.
Jonathan—H. A. Ahlrich, Neoga, Ill.
Stark—H. A. Ahlrich, Neoga, Ill.
Willow—H. M. Dunlap, Savoy, Ill.
Willow—L. R. Bryant, Princeton, Ill.

Shipments of new apples are now being made, and will be kept up until the close of the Exposition. L. R. Bryant, Sec'y.

Princeton, Ill., Sept. 10.

RUN DOWN ORCHARDS.

How Orchards of This Kind Can be Restored to Fruitfulness.

There are many orchards all over the country of the "has-been" kind, says the Homestead, that are not exhausted because of old age. They were well planted originally, perhaps, and for a time well cared for, but eventually they have fallen into neglect and the trees become pincushions of the ground that make no return for the land they occupy. Sometimes it is because no effort has been made to keep up the fertility of the soil; sometimes the vitality of the trees has been impaired by overbearing; sometimes the greed of the owner has prompted him to try to make the land do double duty, or there is lack of cultivation, or a seasonal drawn that has changed the texture of the soil and crushed the growth; pruning has perhaps been neglected and the top thickens and prevents the entrance of air and light, insects and fungi have been permitted to multiply and in scores of ways, differing in different cases, neglect has produced the inevitable consequence, deterioration. The causes are so numerous that it is impossible to lay down any specific prescription for the cure of a rundown orchard, but this much is certain, that trees must not only be started well, but there is never a time in their history when they do not require attention. A tree never becomes run down in this way without having for some previous seasons given warning of the doom that was impending. It must draw food from fertile soil, and if fertility is failing its appearance will inform the watchful owner. It should each season have an abundance of healthy foliage, and if it fails in this the cause should be looked for. It cannot safely bear the burden of sustaining a large amount of unprofitable wood. Every intelligent horticulturist, too, recognizes the fact that the trees must be protected against insect and fungi pests by intelligent spraying. There are those, of course, who have made up their minds that spraying is useless. There is a good deal of spraying that is useless; that may be conceded. It is often done at improper times, with improper materials and with a lack of that thoroughness that is essential to procuring the advantage of spraying. Spraying that would be suited for one insect may be entirely unsuited to combat the difficulty that actually threatens. Spraying is also not so much a cure as a preventive. After a disease or an insect has thoroughly gotten in its work, spraying is not likely to effect a complete cure, although properly done it would have been perhaps a perfect preventive. But this, by the way, is one of the points at which there is a great deal of orchard neglect—a neglect that brings its own punishment, and until this fact is realized by owners of orchards the usually large proportion of rundown trees may be expected to continue.

The rundown orchard should be studied if it is to be cured. The trouble should be diagnosed carefully before the cure is attempted. Is fertility needed? Supply it. Is cultivation wanted? Furnish that. Should the trees be pruned, thinned, scrubbed, scraped and freshened up with the soap washes? Give them what they need. Perhaps the trees have lived too high and the roots need cutting off at a point where they are, say, a quarter of an inch thick. Many an unproductive orchard has been made fruitful in this way. An orchard that has cost money and time to make it ought to be kept productive. The best way to do it is to give it some attention every season and hearken to the warnings which the condition of the trees gives to its observant owner. It is a good deal better to prevent difficulties than to try to cure them, but many an orchard that is in a condition that seems to be almost hopeless can be restored to fruitfulness if the trees and what is the matter with them is studied.

THE EAGLE PLUM.

Several weeks ago this office received some choice specimens of the overbearing Eagle plum from its propagators, Baker Bros., of Fort Worth, Texas. The specimens received were not as large as the Wild Goose, yet of fair size and of a beautiful red color, some of them being a deep red and some slightly yellow; while the flavor when fully ripe, was very good, indeed. On our trip to Fort Worth in August, Mr. Baker showed us many good trees of this variety, so that we had the pleasure of both seeing the fruit on the tree and eating it fresh in the orchard. Mr. Baker states that the original tree has not failed to bear for 27 years, and that in 1899 and 1900, when many other varieties were either an entire or partial failure, the Eagle plum bore good crops of nice fruit.

It is not only an overbearing plum of excellent quality, but a rapid grower, while it sells well in the market, even in competition with other varieties of good plums.

Don't fail to read our great offer on Inside Cover Page.

BELGIAN HARES.

From the Northwest comes a protest against the Belgian hare. The craze over this animal has invaded that section to such an extent that the farmers there are organizing and sending petitions to congressmen representing Iowa and Minnesota against them. The petitions insist they are only rabbits and that aside from their quality of superior breeding they are hostile in habits and formidable and are a menace to the agricultural districts of any country in which they are introduced.

A special dispatch from St. Paul gives the following facts.

"During the last few months hundreds of these hares have been imported into Minnesota from the Pacific coast and several Belgian hare farms have been established. The proprietors assert that the industry is legitimate and they are organizing to fight the opponents of the hare.

"They point out that there are hundreds of thousands of these hares in California but that no reports of damage to crops are ever received from that State. The hare industry is on the increase in Minnesota, and the apprehensiveness of the agricultural population increases correspondingly." Produce Review.

We have been thinking for some time as we have read of the Belgian hare craze that it would only be a few years until the city would be going up "to the use of this terrible pest that is destroying nurseries, gardens and young orchards." The hare is like the rabbit in many of its characteristics. It relishes bark, fruits and vegetables. It can gnaw a young tree and cut a plant. It multiplies rapidly. It will run from place to place. Why, then, will it not injure the farmer, nurseryman and gardener?

Doubtless the Belgian hare breeders will be as fondly remembered in a few years as the man who introduced the pestiferous English sparrow.—Ed.

GOOD METHOD OF KEEPING EGGS.

The requisites for preserving eggs is that they should be kept cool and dark, and be excluded from the air. The following method has been very successfully used for years by extensive dealers, while the following recipe has been sold for years for $5 under a pledge of secrecy.

"Take two gallons of water, twelve pounds of unslaked lime and four pounds of salt, or in that proportion according to the quantity of eggs to be preserved. Stir several times daily and then let stand until the liquid has settled and is perfectly clear. Draw or carefully dip off the clear liquid leaving the sediment at the bottom. Take for the above quantity of liquid five ounces each of baking soda, cream of tartar, salt

THE APPLE CROP.

Mr. George C. Richardson, of the firm of Ryan & Richardson, of Leavenworth, Kansas, extensive apple dealers, thus gives his views of this year's apple crop to the National Packer and Produce Review:

"Taken as a whole, the apple crop of the United States and Canada this year promises better than for any recent year. The outlook in the apple raising portions of Illinois, Missouri and Kansas is for a good half crop; in Arkansas, Nebraska and Iowa prospects are for 40 per cent of the full crop; in Colorado and Montana an average crop; in the Pacific coast states, Oregon, Washington and California, a full crop, but dropping badly; western New York and New England, an average crop; central New York, damage of a local nature from canker worms. Rhoddington, Ill. reports do not indicate a bumper yield, but the supply will be immense, ample, in fact, for the demands. It will be larger than last year, though not enough to make appreciable difference in the market. It is claimed it is as large a crop as can be economically distributed. In Vermont this season the crop promises to be an average one. In Bennington and vicinity apple trees are well loaded. In and about Cambridge and Fletcher the prospect is not so good. A prominent nurseryman and apple grower there reports that he does not expect one-half a crop, and attributes the cause wholly to the ravages of the crest worm of a year ago. In Jujuro Valley, Cal., it is estimated that there will not be less than 1,000 cars of good four-tier stock, and that the total for shipment will run up to 1,500 carloads. Salina, Kas., reports only 20 per cent of a crop, with 5 per cent for the state."

PLAGUE IN ASIA MINOR.

The California Fruit Grower is authority for the statement that during the past few days some excitement in fruit circles has occurred over the reports of plague in Asia Minor. Unauthorized reports are in circulation to the effect that the United States government has placed restrictions on imports from Asia Minor and other parts of the Far East. This action, if true, would prevent the importation of Smyrna figs, Sultana raisins, etc.

The crop of Smyrna figs this year is known to be large, and a heavy business was expected with the United States, but owing to plague scare business in Smyrna figs and Sultana raisins at this writing is at a standstill.

A cable from London, dated August 14, states that the situation is improving, and no importance is attached to the plague reports.

BARRELS OR BOXES FOR PACKING APPLES.

I am thoroughly convinced that for the better grade of apples the barrel is doomed, states Prof. Bailey in American Gardening. It will not go out of use this year or next, nor by a legislative act, but I am convinced that we shall see a gradual increase in the use of boxes. The ordinary kind of apples, as Baldwin and Ben Davis, may perhaps be shipped in barrels to better advantage, at least for the time being; but all good grades of the best apples must eventually come to be sold in smaller packages.

The tendency of trade is toward the small package. The time is not so very far back when peaches were sold in the bulk, but now the finest grades are sold in small baskets, and the buyer takes them home for the dessert. Pears are now sold very largely in boxes or half barrels. In the old days grapes were shipped in barrels in New York state.

The better the fruit, the smaller the package should be, as a rule. One cannot conceive of a consumer taking home a barrel of apples under his arm to his wife or his sweetheart.

The transportation in dishonest packing is very much less in the small package. It is impossible for a man to put a bushel of poor apples in the middle of a bushel box. The small package enforces high grading and uniform packing of the product.

It is almost impossible to pack many varieties of apples so snug in a barrel that they will not shake when they reach their destination. This is particularly true if the apples are to be exported.

The small package will tend to induce people to wrap their fruits, especially of the dessert kinds. Wrapping of the fruit not only insures the keeping of it, but it also takes up the slack and prevents shaking. Apples which are well wrapped fill a box more rapidly than those which are not; the box does not contain so much fruit.

I am aware that there are many objections to the use of the box, but nevertheless it is bound to come to the fore for the better qualities of fruit.

EUROPEAN MARKET FOR AMERICAN FRUIT.

Professor John B. Smith, who is the state entomologist of New Jersey, has just recently returned from a trip to various market centres of Europe, and while there made quite a thorough investigation concerning the sale of American fruits. He learned that it was nearly out of the question to ship fruits into France without special treaty arrangements. The French officials seem to think that all American fruit is to be excluded. If the fruit goes through at all, there is so much red tape it causes delay until the fruit frequently spoils before it reaches the consumer.

Little fruit from America is received in Belgium, while Holland receives more, and has given up all exclusion laws. Germany is using many American apples, a consignment of 30,000 barrels being received while Mr. Smith was there.

The professor believes if American shippers will only pack first-class fruit in the best packages, that the market will be good. He says that only one barrel in ten is opened and the remainder judged by that. Poor fruit in the bottom of the barrel does much injury to the sale. The American fruit exhibit at Paris was considered by Prof. Smith superior to that made by any other nation.

TREATING A PEAR ORCHARD FOR SAN JOSE SCALE.

J. W. Stanton, before the Illinois State Horticultural Society, gave the following: I had a pear orchard winter before last affected with San Jose scale. There were fifteen hundred trees in this lot. We cut the trees back pretty severely and treated them with whale oil soap. A good many people came while we were cutting them back and told me that I might as well cut them off at the top of the ground because they would die any way. I didn't lose a tree from the effect of cutting back or the spraying. We did this in the winter, I think in February. The following summer the foliage on the orchard was much better than anything in the country. I had two other orchards and compared it with them and noticed that the foliage on the orchard that had been sprayed was very much healthier than the others. I noticed also that there was scarcely any blight whatever in that orchard of fifteen hundred trees, but in the other two orchards I had considerable blight.

THE JACKSONVILLE FRUIT COUNTRY.

In a letter under date of July 24 addressed to the Texas Rural, a Mr. Washington aptly replies to the inquiries of many persons concerning the fruit and vegetable business around Jacksonville, Tex. He writes that during the past month and up to date we have shipped fifty-five cars of tomatoes, realizing about $500 per car, and 115 cars of peaches, besides perhaps 75 to 100 cars by express, on which fancy prices have been realized. Tomatoes pay from $150 to $300 per acre, depending on date of ripening and quality of land planted, also on the skill and care taken in planting and cultivation.

As an example of the amount realized per acre on peaches allow me to give that of a man who received $400 for ten acres of peaches in the orchard. The amount per acre in general depends entirely on the variety planted and care bestowed on them while growing.

The planter need not lose the use of his land at all until peaches are bearing, as cultivation helps the young trees.

Our crops here ripen about ten days or two weeks earlier than those of Georgia and three weeks to thirty days earlier than those of Arkansas and Tennessee.

The peaches, berries and tomatoes shipped from this point are pronounced in

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all the markets as being superior in flavor to any grown in the United States, and in size and development they are classed as strictly fancy.

OREGON APPLES.

A correspondent of the Hood River Glacier says: The apple crop of Hood River is the best we have had for years. The spray pump has been kept going, and very little damage has been done by the codlin moth so far. The next thing is to look out for a market for our crop. Not one-half the growers are prepared to keep their winter apples for a winter or spring market, but will be obliged to sell at picking time. Some of them would prefer to sell their crops on the trees. These growers will feel the necessity of advertising Hood River's big apple crop and will be interested in the holding of our biennial fair. If the fair is held and well advertised it will bring apple buyers. It may be too early to hold our fair before the Portland street fair and carnival, but we should not fail to have an exhibit in Portland as well as at home.

AN APPLE ORCHARD THAT PAYS.

We would be glad to give due credit to the following: "Growers of fruit and vegetables are stubborn, but facts will bring them. That fruit trees must be cultivated with as much care as vegetables is being gradually realized. There are more who do not realize it than there are who do. No effort should be spared to pound these salient facts into the heads of the owners of fruit trees. Is there a farmer or grower who would think of raising corn, potatoes or cotton without plowing? It is just as essential to plow and cultivate the fruit trees as corn, cotton or potatoes.

Perhaps one of the most striking illustrations of the money to be made by care of the apple orchard is the case of William Page, of Bethany Center, Genesee county, N. Y. Mr. Page had a farm of 200 acres; of this 100 acres were in apple and pear trees. For years he gave no attention to the fruit. It grew as it happened and it was seldom that he realized any money from the apples. They were small, worm-eaten, and most of them fell off before maturity. The orchard was never cultivated. Weeds and grass grew at liberty.

Such conditions disgusted Page and he went to Fen Yan, N. Y., to a real estate agent and wanted his two hundred acres sold. He told about the fruit trees and the agent felt there would be little trouble to sell it. There was a hitch on the conditions of the sale and Page returned home determined to do something with the orchard. He told his wife he was going to rip the old orchard out and either rule it or make something out of it.

Upon inquiry Page met some good Samaritan who told him to cultivate and spray his trees. That was in 1893. Page began to cut out the old trees, prune up the good ones and cultivate thoroughly. He manured the land and in one year saw a big difference. Here is the record for the farm since 1896, showing what it is possible to do:

In 1896 Charles Foster paid Page $5,000 cash for the apples as they stood on the trees. For this 1897 crop Pat Gleason of LeRoy, N. Y., paid $15,000 cash. For 1898 the crop brought $8,000 and in 1899 it only produced $6,000. This decrease was caused by elimination of old trees and replacing them with young ones. The total cash paid Mr. Page since 1896 was $34,000 and in 1898 he not only offered the land with these trees on it for $14,000 but 100 acres more. Today Page's orchard is limited and if he could get the prices of last year the apples would be worth $25,000. As it is he will likely get $20,000 for the crop. This would make $54,000 produced with but means of orchard in five years. Page has become a scientific sprayer. He does everything right and his apples are fine. He has a reputation in all western New York for growing good apples.

Had Page sold his farm he would have been a great loser. Instead of selling he is adding more and more, and now has three separate farms. He bought two and will likely buy more. This is what spraying and cultivation will do."

UNPARALLELED APPLE CROP.

The following letter from the special committee of the National Apple Shippers' Association fully states their view of the prospective apple crop:

To the Members of the National Apple Shippers' Association: The Press Committee of the National Apple Shippers' Association beg to say that, owing to the fact of having received crop estimates from only about fifty per cent of its vice presidents, it will be impossible to present any tabulated report at this meeting.

From a careful and comprehensive review of all the information in our possession, it is our opinion that the coming apple crop of the United States, Canada and Nova Scotia will be the largest of any crop within the history of the country. While certain apple bearing sections of the United States report moderate and even light yields, the proportion of such to the whole is unimportant. The crop of New England, New York, New Jersey and Pennsylvania is very heavy as a whole. The Central Western, Southern, and South Western tier of states, while not reporting a generally full crop, all anticipate a moderate yield, while some have the promise of heavy yields in certain sections. The crop of the far West will be a full one, while Canada and Nova Scotia report the heaviest crops on record. To sum it all up, it is our opinion that the general apple yield of the entire country will have had no parallel in the past, and that it is generally of good quality. To be fully marketed and consumed [illegible] will therefore have to be brought at very low prices. Charles Foster, President Page Commission.

Cleveland, O., Aug. 3, 1900.

GRADING OF APPLES

As Adopted by the National Shippers Association.

Resolved, that the standard for size for winter one apples shall not be less than two and one-half inches in diameter and shall include such varieties as the Ben Davis, Willow Twig, Baldwin, Greening and other varieties allotted to [illegible]. That the Standard for such varieties as Jonathan, Russett, Wine Sap, Jonathan, Missouri Pippin and other varieties kindred in size shall not be less than two and one-quarter inches. And further that No. 1 apples shall be at time of packing practically free from the action of worms, the decrement of surface or scrubbing of skin; shall be hand-picked from the tree, a bright and normal color and shapely form.

Number Two apples shall be hand-picked from the tree; shall not be smaller than two and one-quarter inches in diameter. The skin must not be broken or the apple bruised. This grade must be fresh and packed with as much care as No. 1 fruit.

By resolution of August 7, 1900, your secretary was authorized to publish the above a copy of the grade adopted by the association, and request every member to incorporate same in their apple contracts for use this year, and as far as possible use such grading when packing.

A. Warren Patch, Secretary.

The finest crop of apples ever produced in Ionia county is what Berrien county, Michigan, now promises, while the peach crop is also a record-breaker. Many peach trees, however, are dying. The red bugs, and nearly all the orchards here are becoming infested with this trouble. The apple orchards were well sprayed and the fruit is consequently very clean. Grapes and pears are plentiful there and of excellent quality.

ESTABLISHED 1866.

M. GEORGE. W. D. HALL.

M. GEORGE & CO.

Commission Merchants

FRUITS AND VEGETABLES, ETC.

SPECIALTIES: Strawberries, Cantaloupes, Peaches and Tomatoes in Carload Consignments

All goods sold promptly on arrival, and all sales made under our personal supervision. No [illegible] satisfaction.

CORRESPONDENCE SOLICITED

STENCILS FURNISHED FREE ON APPLICATION

REFERENCES: Any shipper we have ever done business with or this paper.

95 SOUTH WATER ST., - - - CHICAGO

Cannery News.

CANNERY CATECHISM.

Apples.

Question. What can a factory pay for good apples per bushel for canning?

Answer. 15 to 25 cents for culls, 40 to 75 cents for shipping or first-class apples, owing to crop.

Q. How many No. 3 cans will one bushel fill?

A. From 22 to 26 according to quality.

Q. What will they cost per dozen put up?

A. Fifty to sixty cents per dozen.

Q. What will they sell for the dozen?

A. Frequently worth 80 to 85 cents per doz. for No. 3 cans, $2.50 for gallon cans.

Gallon Apples.

	Highest.	Lowest.
1894	$4.00	$2.00
1895	2.75	1.80
1896	2.00	1.50
1897	2.50	1.45
1898	2.75	2.25
1899, Aug.	3.40	2.60

Authority for the above quotations, the American Grocer.

Q. What is the capacity of fruit plant per day 12 hours?

A. 10 to 12 thousand cans.

Q. How many skilled hands to run it to full capacity?

A. 50 to 75.

Q. How many other hands?

A. 10 to 15.

Q. How much fuel per day to run 25-horse boiler?

A. Determine from price of fuel in your locality.

Pears.

Q. What can a factory pay for pears per bushel for canning?

A. $1.00 to $2.00.

Q. Is the further cost about the same as on apples?

A. Yes.

Q. How many No. 2 cans will one bushel fill?

A. 24 to 30 three-pound cans.

Q. What will pears sell for by the dozen cans?

A. About $1.50.

Cherries.

Q. What can a factory pay for cherries by the bushel?

A. $1.00 to $1.25.

Q. How many cans of No. 3 will one bushel fill?

A. 35 to 40.

Q. About what will they cost per dozen cans?

A. 70 to 80 cents.

Q. About what is the selling price per dozen cans?

A. $1.00 to $1.50.

Strawberries.

Q. What are strawberries worth per bushel?

A. Too much variation to make a set price.

Q. How many No. 2 cans will a bushel fill?

A. 70 to 90.

Q. What is the cost per dozen put up, ready for market?

A. Too much variation in putting up to make fair estimate.

Q. About what will they sell for per dozen cans?

A. 75 cents to $2.00.

Peaches.

Q. What can factory pay for peaches per bushel?

A. 60 cents to $1.00.

Q. How many No. 3 cans will one bushel fill?

A. 22 to 35.

Q. About what is the cost per dozen cans?

A. 40 cents to $1.10.

Q. About what is the selling price per dozen cans?

A. From 75 cents to $2.00, according to way packed.

	Highest.	Lowest.
1894	$1.65	$1.30
1895	1.30	1.25
1896	1.40	1.10
1897	1.60	1.20
1898	1.60	1.20
1899, Aug.	1.75	1.40

Authority for the above quotations, the American Grocer.

A 20-YEAR-OLD ORCHARD IN THE BEAR RIVER VALLEY, UTAH. IN THE LAND OF IRRIGATION.

Raspberries.

Q. What can factory pay per bushel?

A. $2.00 to $3.00.

Q. How many No. 2 cans will one bushel fill?

A. 70 to 90.

Q. About what is the cost per doz. cans?

A. Too much variation to make estimate.

Q. About what will they sell for per dozen cans?

A. Now $1.10 to $1.50.

Blackberries.

Q. What are they worth by the bushel?

A. $1.00 to $1.75.

Q. How many No. 2 cans will one bushel fill?

A. 70 to 90.

SPRAGUE CANNING MACHINERY CO.

Sales Office:
802 Masonic Temple,
Chicago, Ill

Factory: Hoopeston, Ill.

Q. What will they cost per dozen?
A. 40 to 60 cents.
Q. What will they sell for per doz. cans?
A. 70 to 90 cents.

Gooseberries.

Q. What can be paid per bushel for them?
A. $2.00 to $2.50.
Q. How many No. 2 cans will one bushel fill?
A. 70 to 80.
Q. What will they cost per dozen cans?
A. 45 to 60 cents.
Q. What will they sell for per doz. cans?
A. 75 cents to $1.00.

HOW TO START A CANNERY.

Organize a stock company and raise from $5,000 to $50,000, owing to the size and capacity desired.

Be sure you have the right location for obtaining at reasonable prices and in large supply all that it is desired to can.

Fuel should be cheap, labor plentiful and at reasonable wages, good shipping facilities, and an abundant supply of pure water.

Fortunes have been made and fortunes lost in the business, so it will pay to employ a skilled manager and proceed cautiously.

FRUITS AND VEGETABLES THAT ARE CANNED.

Factory products are put up about the following order, beginning in May and ending in October:

Green Peas, Pineapple, Strawberries, String Beans, Cherries, Raspberries, Marrowfat Peas, Whortleberries, Blackberries, Green Gages, Pumpkin, Tomatoes, Pears, Lima Beans, Corn, Apples.

TIME FOR COOKING DIFFERENT KINDS OF VEGETABLES FOR CANNING.

	Mins.
Tomatoes	10
Pears (also peaches, heat 240 deg.)	4
Cherries	2
Gages and plums	2
Berries	2
Apples	2
Early June peas	15
Marrowfat peas	25
String beans	120
Lima beans	25
Pineapples	7

CIRCULAR TO FRUIT GROWERS.

To the Members of the Illinois State Horticultural Society, and the Fruit Growers of Illinois, generally:

It is the intention of the Executive Board of this Society to endeavor to secure extra premiums for the display of fruit at its annual meeting, to be held in Champaign Dec. 11, 12 and 13, 1900, in addition to the regular liberal list, and to make this display a notable one in the history of the society. The meeting will be held at the State University in the new Agricultural Building, and we are offered all the room and all the accommodations that we need. The arrangements for extra premiums are not yet complete, but the regular premium list of the Society will be found in the annual report for 1899.

The purpose of this circular is to call attention of intending exhibitors to the facilities for cold storage at Champaign, and to the liberal offer of the Twin City Cold Storage Co. of that place, through its secretary, Mr. G. B. Stover, to care for all fruit that may be sent to them intended for exhibition at the annual meeting, free of charge. This will give exhibitors opportunity to show earlier varieties of fruit than usual. Your attention is invited to the following instructions which are given for packing and shipping:

"I would suggest that you wrap in paper and pack in crackle boxes any apples which you may send us, for I know from experience that they will keep much better that way. If it is your intention to try to hold any grapes, I think it would be well to get the regular grape carriers containing from three to six five pound baskets. The grapes should be cut from the vines before the stems have commenced to dry out at all, otherwise the grapes will drop off of the bunches. Grapes should, of course, be sent by express. Shippers should advise us when any shipments are made so that we can look after them promptly on arrival."

All packages of fruit for storage should be addressed to the Twin City Cold Storage Co., Champaign, Ill., and marked "For Exhibition at Illinois State Horticultural Society," and parties who have no business arrangements with the Storage Company should prepay all express or freight charges, as the State Horticultural Society will in no case be in any way responsible for them.

Regular and special premium lists will be issued as soon as all arrangements are made, and sent to all members of the society and to all applicants.

L. R. Bryant,
Sec'y Illinois State Horticultural Society,
Princeton, Ill.

ILLINOIS FRUIT WINS AGAIN.

Awarded First Prize for Collection of Apples. Eight Gold Medals to Our Credit.

"Washington, D. C., Aug. 22, 1900.

Hon. H. M. Dunlap, Pres. Illinois State Horticultural Society, Savoy, Ill.

Dear Mr. Dunlap:—I am just advised by Col. Brackett that in the Temporary Competition of Aug. 8, your Society was awarded First Prize for a collection of apples of the crop of 1899, consisting of six varieties furnished by the following growers:

Ben Davis, H. A. Aldrich, Nauvoo, Ill.
Ben Davis, W. A. Young, Butler, Ill.
Grimes, H. M. Dunlap, Savoy, Ill.
Jonathan, H. A. Aldrich, Nauvoo, Ill.
Stark—H. A. Aldrich, Nauvoo, Ill.
Willow, L. R. Bryant, Princeton, Ill.
Willow—S. H. Sovereign, Oskaloosa, Ill.
Winesap, W. H. Crain, Villa Ridge, Ill.

Very truly,
Wm. A. Taylor, Acting Pomologist."

"L. R. Bryant, Sec'y Ill. State Horticultural Society, Princeton, Ill.

Dear Sir:—The above medal this day rec. from Washington. This makes eight Gold Medals to our credit. H. M. Dunlap."

booker T. Washington, the president of the great college for negroes at Tuskegee, Ala., says: "In the present condition of the negro race it is a grave error to take a negro boy from a farming community and educate him about everything in heaven and earth except the dignity and sympathy with everything that has to bearing upon the life of the community to which he should return and out of sympathy with most that concerns agricultural life. The result of this process is that in too many cases the boy thus trained fails to return to his father's farm, but takes up his abode in the city, and falls, in too many cases into the temptation of trying to live for his wife without honest productive employment."

ILLINOIS FRUIT FOR THE PAN-AMERICAN EXPOSITION.

The following important letter is being sent out by the Illinois State Horticultural Society:

Office of the Illinois State Horticultural Society,
Princeton, Ill., Sept. 1, 1900.

Dear Sir: The Illinois State Horticultural Society will make an exhibit of fruits representing society of Illinois, at the Pan-American Exposition at Buffalo, in 1901.

The exposition will open May 1st and close November 1st, and it is intended to have the fruit exhibit continuous, from the opening to the close. The apples for this show must come largely from this season's crop, and in order to have them properly represented the fruit intended for the early months must be carefully selected, wrapped, packed and placed in cold storage, and reserved for exhibiting.

The Horticultural Society expects that fruit will be secured and held for this purpose by individuals

VIRGINIA HOMES

You learn all about Virginia lands—soil, water, climate, resources, products, fruits, berries, mode of cultivation, prices etc., by reading the VIRGINIA FARMER. Send 10 cents for three months' subscription to

FARMER CO., Emporia, Va.

Or send 50 cents to the AMERICAN FRUIT AND VEGETABLE JOURNAL and obtain both papers for one year.

The Colorado

AND

Southern Railway

Reaches the richest farming sections of Colorado. It also offers the tourist the grandest scenic attractions in the world.

Our Beautifully Illustrated Book

"Picturesque Colorado"

Sent to any address on receipt of 3 cents to prepay postage.

T. E. FISHER,
General Passenger Agent,
Denver, Colo.

ridual growers, horticultural societies and other organizations. Proper credit will be given the grower, the society, and locality by entering the fruit in the name of the grower and society the same as if he were making the exhibit in person, and by placards upon the fruit when exhibited, giving the grower's name, locality and state.

All fruit growers are asked to aid in the matter of securing the fruit from this state. The society will do what it can, but it depends upon you, the grower, to make the exhibit from Illinois a success. The exhibit will be largely a commercial one, that is, one for the purpose of enlarging our foreign markets for apples, and this is a subject of great interest to Illinois fruit growers.

Illinois stands in the front in the fruit exhibit at Paris this year, but in order to sustain her prestige, must continue her work in the line of exhibits and fruit, and the opportunity presented at Buffalo should not be neglected.

Shall the state be properly represented? This is for you to decide. You must do what you can. Will you contribute one, two, five or more barrels of carefully selected fruit, and ship it to cold storage in proper season? Write the secretary, whose address you will find below, how much you will contribute and what varieties, and he will see that you have the paper for wrapping the fruit and shipping tags furnished you. Are you interested enough in Illinois horticulture to do this? The commission will pay the freight, storage and all other charges and place the fruit on the tables, without any charge to you. We want one hundred barrels of apples from this state and the amount will be small to each one, if each does his part. Will you?

It will save expense to the Society if you will pick, wrap and pack the fruit, as per the directions which will be furnished you later, but if you find this will be impossible, write the Secretary, and some one will be sent to assist in the work. Not less than one peck of any one variety should be furnished; one-half barrel or a full barrel of each variety preferred. It is not intended to collect a large number of varieties, but those most generally grown for market, therefore a full barrel of one variety will be accepted and is desired. Let me hear from you by return mail and oblige

C. E. Gregg Sec.

Princeton, Illinois.

H. M. Dunlap, H. A. Aldrich, C. H. Special Committee on Collection of Fruit.

GOOD METHOD OF KEEPING CELERY.

The following simple plan for keeping celery described in American Gardening, is worthy of consideration:

Some people still ask about storing in a cave, but the only safe plan of a cave for celery is not to make one. We have tried keeping celery in many ways, in cellars, in pits, and, in fact, in every way that has ever been tried; but have never been so successful as when we have left it in the rows as it grew.

We dig down on each side of a row as close as possible to the plant to the bottom of the roots, then carefully take up earth about roots for a foot on either side of the row, then pack the earth snugly about the other rows, precisely as when the celery was last earthed up, which leaves the tips of the leaves uncovered, after which cover the tops to the depth of three inches with fine hay or straw; then protect the sides with stalks or leaves, which can be kept in place with a little earth, sufficient to keep out the frost. An outer covering of stalks will permit of taking out a supply as wanted any time during the winter, and it will always be crisp and have the flavor for which celery is celebrated."

[We have seen celery kept in the above manner, taken from the ground in March, in excellent condition. Ed.]

TWO PROMISING PEARS.

In the spring of 1892, and in the following spring, our Experimental Station planted two rows of pear trees, including thirty-four trees, and about twenty different varieties. Most of these were obtained from Prof. Budd and were varieties that he had imported from Russia. A few, however, were of varieties native to this country. Of this planting only three trees remain. These trees are of two varieties viz., two trees of the Vermont Beauty and one of the Wilder Early, both of which are native. During the summer of 1898 the blight was very severe and destroyed almost all of the Russian varieties. The winter of 1898-99 was exceptionally severe, and removed the remainder, except the three trees mentioned. These trees were badly injured in the root, and the wood of the Wilder Early was much blackened at the heart. I thought it improbable that the latter would long survive, but these trees apparently recovered from the effects of the severe winter and two of them bore a good crop of fruit the past summer. One tree of the Vermont Beauty has suffered considerably from the blight, the other has so far escaped. The Wilder Early tree has not suffered from blight at any time.

Assuming that the most hardy trees of this planting of pears have survived we may infer that these two varieties will be equally hardy, both as regards blight and winter-injury. The fruit of both is good in quality. While neither is equal to the Bartlett, I think both are equal to the Flemish Beauty. Unfortunately we do not have the latter variety growing, and so cannot say how these varieties compare with the Flemish Beauty for hardiness.

Pear culture in our state has so long been pronounced a failure that I do not feel ready to recommend any varieties as sufficiently hardy for general planting, but I am inclined to think that the Wilder Early and the Vermont Beauty will compare favorably with the Flemish Beauty for hardiness.

E. T. Goff,
Horticulturist,
Wisconsin Experiment Station.

A NEW HOME IN THE TEXAS COAST COUNTRY.

Roses every month. Figs, peaches, pears, plums, grapes and strawberries produce the finest fruit. Cotton, corn, cane, cabbage and sweet potatoes are great crops. Cattle live on the fine grass of the rich prairies the entire year.

SUBSCRIBERS, HELP!

We wish to largely increase our subscription list. To do this we must get fruit and vegetable growers acquainted with our paper. We therefore ask each one of our subscribers to send us the names of five intelligent persons who would probably be interested in the American Fruit and Vegetable Journal. To each one of these names we will send our paper absolutely free for three months, and then stop it unless they wish it continued. To every subscriber who will thus accommodate us we will send as a premium for their trouble, absolutely free, their choice of any of the books mentioned under the heading, "Subscribers, help!" on page 18.

HOMESEEKER'S DEPARTMENT

TEXAS BROOM CORN.

While at El Campo a few weeks ago we were wonderfully impressed with the similarity of the soil and general outlook of the country to the rich corn and broom-corn region of central Illinois. Many persons have experimented in growing broom-corn in Texas, and many successful reports are given. Mr. Collins, at Alvin, Tex., is reported growing a crop that was planted the 28th of May, which matured the last of July, and from which he expected to obtain a second crop. The crop is said to pay $100 per acre, according to the experiments made by Mr. Collins and other growers.

CABBAGE GROWING PROFITABLE.

Some parties from Illinois are preparing to plant one hundred acres in cabbage near Skidmore, Tex. It is the intention to irrigate the cabbage by pumping water from wells, a method that is said to have proven very satisfactory and successful in that section, as the water supply is very great and easily pumped.

VEGETABLES IN THE COAST REGION.

Mr. E. C. Stiles has given his opinion and experience in growing vegetables in the coast country to the Texas Rural, in part as follows:

"The soil here is of two kinds—a loam varying from a black to straw in color, and a black waxy. The lighter the loam the greater its fertility. As it becomes darker it becomes heavier and less suited to many vegetables. It is all very fine, silt-like soil, and if highly fertilized and thoroughly drained the loams become typical garden spots. There is more or less salt in the soil, but it does not manifest itself until the moisture is well spent.

"I am a student of seed catalogues. They all begin with asparagus. I believe the conditions here to be highly favorable to its successful and profitable growth. I have several hundred plants now growing finely. So far no injury has befallen it from any source; the prospects—I say prospects—are flattering. Perhaps others have tried it here and failed, but I have so far learned of no trial having been made.

"This is apparently the Promised Land for cabbages. Judging by last winter's experience, cabbage will take care of itself if rich soil and protection against rabbits is afforded. It is difficult to start plants in the fall, as the birds are extremely fond of the young two-leaved things and will destroy thousands of them in a morning if given a chance. When the first frost of fall comes and destroys the grass of the prairie, rabbits invade and destroy the cabbages. Last winter, after they had eaten my patch down to stumps, I killed them with strychnine on sweet potato. I considered the patch ruined, and abandoned it, but with the extermination of the rabbits growth began and encouraged by cultivation, resulted in a good crop of heads. They were not, during the whole growing season, attacked by bugs or insects of any kind. A cabbage crop ought to pay handsome profits here even at ordinary prices. * * *

Cucumbers are grown here by the acre, and shipped to the pickle factories in Galveston. All the garden family do well.

"Irish potatoes usually do well. This season has been rather wet for their best growth.

"This is the best location I have ever seen for the growth of fall crop of potatoes. Some of the farmers here tell me that the fall crop of potatoes is better and more reliable than the spring crop, and they keep perfectly until fall, or in the following spring. The growing of fall potatoes for seed purposes should be made a leading feature with the truckers here. I hope to try my fortune with late potatoes this fall."

FIG CULTURE.

On our recent trip in southern Texas we were surprised and delighted to see fine, well and rapidly the fig trees grew. The following story told by the Texas Rural, concerning fig growing at Alvin, Tex., at which place we stopped and are some of their fruit, will be of interest:

The culture of figs was only begun in earnest in this section a couple five years ago. The trees bear the second year, the fruit beginning to ripen by July 1 and continuing until frost. There are a few growers here who have had wonderful success and been well paid for their care and attention.

Mr. C. S. Lindemann is one of the most successful ones, and the trees special pet. Six years ago he settled here, buying ten acres of land on which he built an ideal home. Nearly all of his ten acres are growing fruit. Five years ago Mr. Lindemann planted two acres in figs, and is now gathering his fourth crop. The freeze of February a year ago damaged some of his trees, and they have not fully recovered, and he estimates he has a little over an acre, from which he is now gathering. For four days ending the evening he has averaged twenty crates of twenty-four quarts each day, which brings him about $1 each net, and he estimates his present crop at 500 crates. Two years ago he nearly reached 800 crates, and last year from the effects of cold, about one-half as many. He works and fertilizes his fig trees and is rewarded. Besides figs, he is very successful with berries, market garden, of strawberries, blackberries and dewberries, and grows some vegetables and has a variety of fruit to increase.

This is all done on ten acres of land, and Mr. Lindemann does not want to sell his farm. He is satisfied with the climate and with his business. The cyclone and weather injured him [illegible]

PEACH ORCHARDS DAMAGED.

In the great storm which swept over southern Texas and Louisiana on Sept. 8th, great damage was done to the peach orchards. The dispatch states that "the wind blew sixty to seventy miles an hour for fourteen hours. Some fruit suitable for shipping, which were plentiful and had been sold in advance, was scattered from the trees. In central Texas Satsuma late peach trees have been planted within the last three years. The crop of fruit on these trees is all gone and also other late fruit. The vineyards present a scene of desolation."

CAPE JASEMINE BUDS.

Probably few people have an idea of the magnitude of this industry, but it adds many dollars to the income of the gardeners in this section, says an Alvin Texas correspondent of the Galveston News. Orders are received for many thousands and by the first of April the season is fully opened and a carload of the buds handled here daily. C. W. Brown is one of the largest dealers. He has several acres of the bushes and buys many thousands from the smaller growers to fill his orders. Major H. W. Fulton is the pioneer of the business and has the largest plat of cape jasmines in the south. About twelve acres solidly covered with bushes six to eight feet high. He frequently ships from 10 to one day and realizes from $250 to $300 per acre from his flowers. The popularity of this flower is widespread and orders come from every city in the United States and even from Canada. Properly packed the buds will carry for a week and open as fresh and fragrant as though on the bush. These flowers are much in demand for

Have You Visited TEXAS ?

It is the biggest State in the Union. It has a productive soil and delightful climate. There is some unoccupied land left.

The region along the Gulf shore near Galveston and Houston is particularly attractive. A comfortable income is there assured those who intelligently cultivate small fruits or raise garden truck."

You may learn something new about the Texas Coast Country by addressing W. J. Black, G. P. A. A. T. & S. F. Ry. Topeka, Kansas or Chicago. Free descriptive literature furnished.

Inquire of nearest agent regarding cheap homeseekers' excursion rates the first and third Tuesdays of each month.

SANTA FE ROUTE

Decoration day and orders for hundreds of thousands are received to be shipped out for that occasion. The season only lasts about three weeks and is about ten days late this year. The average price is 50 cents per 100 f. o. b. here. During the season the air is redolent with the rich perfume from the thousands of bushes white with bloom, and many people find employment gathering and packing the flowers. This comes just upon the heels of the strawberry season and keeps the cash coming in.

WHEN TO PLANT STRAWBERRIES, AND HOW.

By O. W. Blacknall, Kittrell, N. C.

In growing strawberries a great deal depends on beginning right. More than with almost any other crop.

The strawberry plant is exceedingly intolerant of heat and drought. Its nature causes it to love moisture and coolness, or even coldness in preference to its opposite. If set in drought or heat or if the setting is closely followed by drought and heat, not only a bad stand is likely to result, but the plants that live never do quite as well as those that are set under favorable conditions and grow off quickly.

The way to avoid a set back of this kind is to select the right season to plant. Generally speaking, this season is the cool season. At that time the sun is weak. Plants grow off then without wilting.

This season for planting, which I have broadly designated as the cool or moist season, extends from about September 15 to about April 15. At the far north it might be necessary to plant later in spring than April 15. But throughout the whole United States, with this small exception, planting can be done within the period designated. South of the latitude of Washington, D. C., planting can be safely done on any day within that period that the weather will permit—that is when the ground is not actually frozen. We do nearly all of our planting here in North Carolina in late October, in November, December, January, February or March. We could plant a little earlier in fall and later in spring, but during these months the strawberry plant is so easy to live that we never fail to get a good stand. In fact, though we annually plant from 100 to 200 acres in strawberries, we rarely find it necessary to do any replanting at all.

Nor do we have to rush the work or slight any part of it. The land intended for strawberries we plant in cow peas the previous summer. These peas are sown in drills and given two plowings, no hoe work being necessary. As soon as the pea vines mature they are turned under. They can be cut and dried for forage without much loss to the soil, as it is the roots in which the nitrogen, collected by the plant from the atmosphere, is stored. The turning under is done early in September. By the middle of October the vines have rotted or at least, got tender enough to allow the thorough preparation of the soil.

We then replow the land, run it off three feet apart, sow in the drill 500 pounds cotton seed meal per acre and throw up a light "list" or bed on this. This list is knocked off very low and the plants set 15 to 20 inches apart in the row, as the soil may be more or less fertile, and the variety planted a more or less rampant grower. The other fertilizing properties needed—sulphate of potash and acid phosphate—are both applied as top dressings later on. Directions for these applications will be given in due time.

Of course thousands of acres of strawberries are annually grown with success which are not preceded by a cow pea crop. Here I simply state the ideal condition which should be approached as near as practicable. For strawberries can be successfully grown to follow cotton, tobacco, potatoes and any trucking crop. They can even be grown after corn, though much fertilizer will be needed, as corn is a great exhauster of fertility.

We very often have severe freezes to interrupt our winter planting, but the cold does no harm whatever to the plants set, the strawberry plant being perfectly hardy except in the far north. Where the thermometer drops considerably below zero, North of Mason and Dixon line it is better not to plant from November 15 to March 1, unless the newly set plants can be at once covered with straw or litter. If this is done, planting may be done anywhere unless the ground is not actually frozen.

CUCUMBERS PROFITABLE.

Joel Shoemaker has given his views of the profit in growing cucumbers in the Irrigation Age, as follows:

Cucumber growing is a much neglected yet very profitable industry. Market gardeners seldom harvest less than 150 bushels, and some claim to get 500 bushels from an acre. The early crop usually sells at from $1.00 to $2.50 per dozen, and the late ones bring about half that price. A bushel of pickling cucumbers averages 200 specimens. I have seen professional growers who said they took 100,000 pickles from an acre. If sold on the market, the income will average $200, but if put up in barrels and made into the marketable pickles of commerce, the crop is worth double that amount. Southern growers report an average of 500 crates of 80 to 90 specimens to the acre. These crates are sent to the northern cities, and sold at $1.00 to $5.00 per crate.

The cucumber requires a light sandy soil, plenty of sunshine and moisture, and good care in growing and harvesting. The ground should be free of weeds and plowed in the fall or winter. For early crop the planting should begin as soon as danger from frost is over. If hills are made about four feet apart either way, and cultivation given before the vines begin to run, the growth will cover the ground. A good plan is to dig holes one foot or more in depth, with spade or shovel, where the hills are to be, and fill partly with rotted leaves or vegetable mold. Then scatter a handful of fertilizers containing 8 per cent potash, 8 per cent phosphoric acid and 3 per cent nitrogen. The seed should then be planted in loose surface soil, placed over this, at the rate of six to eight seeds to the hill.

When the plants are up and growing nicely they should be thinned to two to a hill, and cultivated with shallow plow or regular garden weeders. If given too much water in irrigation, or the land is not well drained to carry away excessive rainfall, while the plants are young, the crop will be a failure. Cultivation while the dew is on the vines or just after a rain will cause the leaves to rust and blight. An application of cotton seed meal, or one tablespoonful of nitrate of soda sprinkled around the plants and hoed in will prove beneficial as a top fertilizer. If the plants

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The terms of sale will be one-eighth cash and the remainder in seven annual payments, with interest at the rate of seven per cent per annum.

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A copy of the American Fruit and Vegetable Journal will be sent for the remainder of this year, to any one sending ten cents and furnishing us the names and addresses of 20 persons, who may probably be interested in either the colony or the paper.

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American Fruit And Vegetable Journal.

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are troubled with insects a slight spraying with arsenical compounds, in the same proportion as used for the aphis or apple trees, will prove effective.

Cucumbers for pickles may be planted as late as the middle of June in most localities, and the later varieties should be two feet apart, with two plants in a hill. There are several good varieties, for a better description of which the seed catalogues are the best books of reference. The Early Frame and White Spine are favorites for quick growth, maturing in about sixty days. The Long Green, Jersey Pickle and several others are strongholds for pickling. They should be cut from the vines every second or third day, using a sharp knife or shears for the purpose. Picking should never be done while the vines or leaves are moist, as the fruits will be lessened from such handling. If the pickles are left on the vines until they begin to ripen, the yield will be light.

To make good salt pickles the small specimens of uniform size must be selected. Mix four quarts of salt in two gallons of water and put in the barrel first. Then carefully wash and pack in the cucumbers and add four quarts of salt to each two bushels or 100 cucumbers. Put the head of the barrel over them and weight with a rock or something of about twenty-five pounds. If the barrel should leak any replace the brine, at the rate of four quarts of salt to two gallons of water. Keep the pickles under this solution. When ready to put in vinegar, take out and wash off the salt, soak for twenty-four hours, changing the water two or three times, then warm up in some vessel and soak again. After they are good and fresh, put in another keg or vessel and cover with vinegar, which has been heated. Let the pickles stand for a week and they are ready for use or the market. Such pickles are retailing at the stores for from ten cents to twenty cents a quart.

Don't fail to read our great offer on Inside Cover Page.

CABBAGE GROWING.

One of the excellent contributors of the Irrigation Age gives this interesting article:

Cabbage is a profitable crop for the farmer and market gardeners of almost every section. The gardeners residing near Salt Lake City, in Utah, claim to get an average of 12,000 good heads from an acre. As the market price is never less than five cents, and more frequently ten cents, per head, it requires but little figuring to show that the crop brings from $600 to $1,000 per acre. The business of raising cabbage for market is called to the general farmer as well as the gardener, and the demand for good cabbage and its products of sauerkraut and pickles is usually far greater than the supply. No expensive tools are necessary for growing and handling, and the secret, if there is any, for producing good crops, can easily be mastered by any man who studies the soil and its elements of productiveness.

A mellow, fertile soil is best suited to successful cabbage growth, but any rich, well-tilled plot, when properly fertilized, will return good dividends on the investment. Early cabbage is the most profitable, and requires the very best culture and highly stimulating fertilizers to insure satisfactory results. A fertilizer containing plenty of potash should always be used for both early and late crops. One good mixture, used by those most successful, consists of phosphoric acid 7 per cent, potash 11 per cent, and nitrogen 4 per cent. This mixture, when put on the land at the rate of about 1,200 pounds per acre, will show most surprising results. Early cabbages may be grown profitably on light soils by the use of these fertilizers, but other varieties, as a rule, require heavy land and an application of fertilizers and the best cultivation to produce 12,000 salable heads per acre.

There are many good varieties of cabbage, of the early, medium and late classes. It always pays to plant the best of each kind, if the fact can be ascertained. Among the standard varieties are the Wakefield for early, Drumhead for medium, and Flat Dutch for late. But the first essential with any variety is good seed. The seedsmen have first-rate seed, which usually sells at about 30 cents an ounce. If a cheaper grade is offered, the experienced grower will not purchase. It never pays to get cabbage seed from packages or bags handled at grocery or other stores. The best seeds are obtainable only from those who make a business of furnishing nothing but reliable seed to growers direct every year. One ounce of seed will generally furnish enough plants for a home garden, say 1,500 good plants, while one half pound will grow plants for an acre.

Some people have good success in starting plants in small boxes in the house. My plan is to make a cold frame for the earliest varieties, and sow the medium and late ones in the open ground. A cold frame may be made very cheaply by digging a hole two feet deep and say six feet square. Fill in one foot with fresh stable manure that has been stacked long enough to heat thoroughly, then add six inches of soil and sow the seed, covering lightly. Cover the bed with a cotton cloth, surmounting it, of course, with a frame work of boards or timbers. If the bed is kept moist, the plants will come on early. Later ones may be had by burning a brush heap and digging up the bed while warm and sowing the seed. Keep it handy with brush until frost is over.

Plants should be set about eighteen inches or two feet apart either way. If the furrows run north and south, and the plants are set on the west side, the roots will retain moisture longer than by any other plan. Where irrigation is practiced the young plants should be kept moist for a few days until thoroughly established. Cultivation should be frequent and thorough, using small shovel plows and weeders. If the worms are troublesome a few applications of weed ashes or the liquid lye from ashes and soft soap pretty strong, will kill them. When ready for market the heads may be broken from the stems. If to be kept over they may be buried by putting in trenches, head down, having the heads sticking out. Sauerkraut is saleable throughout the winter. It may be made by chopping the cabbage fine and putting in a barrel, using about one pint of salt to four gallons of cabbage, and weighting until it gets mellow, usually about three weeks.

The Illinois University Experiment Station does not seem to be fond of an interesting experiment to decide whether lime

are injured by feeding from the blossoms of trees which have been sprayed with poisonous mixtures. In three different places a tree has been enclosed within a large cheese cloth tent and different spraying solutions have been used. A stand of bees is placed under each of these tents and the dead bees found upon the ground are gathered up, preserved in alcohol and chemically analyzed to see if there is any poison from the spraying solution in the body of the bee.

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A company with big capital has been organized which will establish a by-product factory at Fresno, Cal., states the Oregon Agriculturist. It will utilize the refuse matter of the wineries, canneries and raisin-dressing plants. Oil will be made from the seeds of raisin and wine grapes. Cream of tartar will be made from the wine refuse and pressed oil from apricot pits. After the oil has been taken out of the grape seeds, tannin will be extracted from what is left.

HOW TO OBTAIN THE BEST GRAPES.

The surest way to secure fine bunches of perfect fruit, says U. S. Agricultural Bulletin No. 11[illegible], is to sack each cluster when the grapes are no larger than small shot. For this work the grower's ordinary paper bags of the 2 or 3 pound size, are used and afford very complete protection from attacks of fungi, insects and birds. The bags should be put on as soon as possible after the fruit is set, and the work can be done very rapidly. The bags should have a small piece cut off from one of the lower corners, so that they will not hold water after heavy rains, and they should not be larger than are needed or many will be torn off by wind.

In putting them on, the mouth of the sack is opened by grasping it by the longer edge and giving it a quick jerk, it is then slipped over the bunch of fruit, the mouth is doubled and folded around the stem and fastened in place with a pin. The cost of the work, including bags, pins and labor does not exceed one-half cent per pound for the fruit, and so it is often very profitable, especially where there is a demand for fancy fruit at something above the usual market price.

Sacking in this way gives complete protection from rot and mildew and secures perfect bunches. It prevents attacks from wasps and other insects and preserves the bloom on the fruit so as to make the bunches much more attractive in appearance than when they are exposed to beating winds. The more tender and thin-skinned the fruit, the greater will be the benefit secured by the work.

Ringing or Girdling.

Ringing or girdling the vines is sometimes practiced to hasten the ripening of the fruit and to increase its size. The operation consists simply in removing an encircling ring of bark from one-fourth to one-half inch in width, from around the vine or cane which bears the fruit. It is very quickly done by passing a knife around the vine twice with sufficient pressure to cut only to the wood, and then taking out the narrow ring of bark between the two cuts. The work should be done early in the season, soon after the fruit sets, and should be practiced with cultivated varieties of the vine to avoid will be of the further use

and should be removed at the next pruning. Fastening a wire closely about a branch will produce nearly the same results, and is equally destructive to the vine.

The practice has been in use many years, but it is not one which is likely ever to become common. It can be followed to advantage when it is especially fine clusters are wanted early in the season for exhibition purposes, and as the girdling hastens the ripening of the fruit a week or ten days, it is sometimes profitable when early fruit is grown for market.

As girdling kills the branches on which it is done, and the whole vine is often weakened by the unnatural treatment, the practice can be recommended as desirable or profitable only in special cases.

THE KIEFFER PEAR.*

There have been a great many things said, and recently there seems to be more than ever before, about this pear. It is not strange that more is being said lately, because a great many sections of country have had their first good crop on young trees the past year, and the markets at picking time were flooded with fine-looking, well-developed fruit. In the absence of a full crop of apples they seemed more conspicuous, and have caused more comments than ever before. In looking over these comments, it is remarkably that scarcely any two agree on any one point, even to the spelling of the name, and you must not be surprised when you hear this, if it differs from all the rest. This is not, however, a comment on the Kieffer pear so much as on the continents before me. I see one single one says it is good to eat; two say it is a good cooker; two say it is good to preserve, can, and dry—to sell, not to eat—I am reading from several of our leading agricultural and horticultural journals. Some say it is good to grow, but hardly fit for hogs to eat, so that every fellow has his own opinion of it. Go on the market and hear remarks made by people who want to buy something good and you will find them just in keeping with these comments.

It seems to me if there is real merit in this pear, with our boasted progress in horticulture, and as much as we want a good, reliable pear, it has taken a long time to develop it.

It is some twenty-five years since Peter Kieffer, of Philadelphia, first introduced it to the public, and only by the efforts of enterprising nurserymen (thanks to them), who wanted to sell trees because they grow quick and easy, still has it been known of it today. Its reputation for poor quality seems to have taken an even start with its introduction, and kept up with the trees as fast and as far as they were planted.

It is true, some commercial orchards have been planted in some few sections of the country, and their crops have been marketed with a varied degree of results, from a fairly profit down to nothing. Very few of these trees have been planted with any regard to soil, location or other conditions, and when the fruit was marketed it was without any regard to the condition of either the fruit or the markets; but just when the grower thought it was ready to be picked it was rushed off to the nearest market, and in the growers' hurry to get there first they all got there at once, and the result was an overstocked market of fine-looking fruit, but so hard and immature that no one could use the pears for anything and only those who did not know them would buy. I have seen on the Kansas City market wagon loads of the finest Kieffer pears, some dumped loose into the wagon, like corn, until the wagon was full; others would have them in barrels, in boxes and baskets, and in any other conceivable way, all of which had been picked but a few days, and no more fit to be eaten than a green watermelon. At the same time most of the commission houses were receiving heavy consignments from further away places, some as far as 200 miles or more, so that they were overflowing with them, and all in that same unripe condition, and no sale for them.

I estimate that more trees have been planted that are not yet bearing than were bearing a crop last fall, so that, in a short while there will be more than double the amount of this fruit coming on the market than there was last season. Now it seems to me that our horticultural societies have a problem to solve in some way in which we can handle this fruit to better advantage. I believe it can be done in part only. There are so many conditions surrounding a well-developed, highly-colored, juicy, and real good Kieffer pear that would make it impossible to do more. What we want is to learn first what these conditions are, and then make use of as many of them as possible.

The first and most important of these is soil. Any of our soils will grow the healthy and apparently well-developed Kieffer pears, but a very few of them will produce them of real good quality. I know of no fruit that is so much affected by the soil as this pear. I am not able to say just what elements of fertility the soil should contain to produce the best results. But I do know that a deep black soil such as we call clay that will produce 50 to 75 bushels of corn to the acre will not give the Kieffer pear any quality, and I also know that most any of our field-colored soils such as we call poor land (but always true, however, will give more or less a good quality. My attention was first called to this point by the late Mr. Holman, of Springfield, Mo., who said that the Kieffer was almost our best pear. And yet, I don't think he had learned its most valuable qualities. I have been a close observer of the Kieffer ever since, and have had opportunity to test it from most of our Missouri soils, besides those of many other states, and am free to say I have never sampled one that could be called good that did not grow on such land as we call poor, or where the subsoil is red, such as is found in most of the Ozark region.

If the Kieffer pear is planted on such soil, and the trees are not allowed to bear too full, but the fruit is properly thinned at the proper time and picked when not quite ripe and each specimen wrapped in paper and packed in barrels (bushel baskets are better) and stored in a cellar with a temperature of not more than 50 degrees that will lower a little later to 40 degrees, and allowed to remain there until toward the holidays, and then submitted to a temperature of about 60 degrees for a few days, they will be ripe, well-colored, sweet and juicy, and almost as good as a Bartlett.

Now, if these pears, grown under favorable conditions, are so much improved by this treatment, of course those grown under other conditions would be improved in proportion under like treatment, besides the advantage of going on the market at a time when they are wanted, and would sell for a good price.

Unless something of this kind is adopted we may some day wish we had not planted so many Kieffers. On the other hand, if even a part of the growers adopt this or some similar plan, we will find our market supplied with luscious, juicy Kieffer pears in midwinter and selling at a profit to the grower. Will those who are growing this pear take the hint?

*By Col. J. C. Evans, of North Kansas City, Mo., read before Missouri Valley Horticultural Society.

Don't fail to read our great offer on Inside Cover Page.

BUDDING TREES BY AMATEURS.

August and September are busy months for nurserymen. Many of them have hundreds of thousands of fruit trees to bud, as the millions of fruit trees which will be required in the next two years will need to be started now. Apples are oftener started from grafts than from buds, but cherries, pears and peaches are usually from buds. But it is not wholly the nurserymen who are interested in budding. There is quite an interesting field for the amateur in the production of many beautiful ornamental trees. In nurseries devoted to the raising of ornamental trees the months named find the propagators busy budding flowering peaches, plums, cherries, and various other trees and shrubs of a wholly ornamental character, and it is quite easy for the amateur to bud these same trees.

There are often on one's grounds wild fruit trees of no value, some perhaps in corners or fence rows, and these could be made of some account by budding. And even in orchards, the character of a tree could be completely changed in the same way.

The flowering peaches consist chiefly of three colors, all double—crimson, rose and white. These are certainly among the prettiest flowers of spring. Buds of three sorts may be placed on the same tree, and as pretty an object formed thereby as one could wish. Another beautiful tree is the flowering crab, both the wild sweet scented and the double one, known as Bechtel's. Usually there is no trouble to find a peach tree or an apple tree on one's

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peter and an ounce of alum. Pulverize and mix these and dissolve in one gallon of boiling water and add to the mixture about twenty gallons of pure lime water. This will about fill a cider barrel. Put the eggs in carefully so as to not crack any of the shells, letting the water always stand an inch above the eggs, which can be done by placing a barrel head a little smaller upon them and weighting it. This amount of liquid will preserve 150 dozen of eggs. It is not necessary to wait to get a full barrel or smaller package of eggs, but they can be put in at any time that they can be obtained fresh. The same liquid should be used only once."

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THE STORM AT GALVESTON.

Doubtless each of our readers has read in his daily or weekly paper an account of the terrible tornado that swept over Galveston on Sept. 8th, destroying probably 2,000 lives, and damaging property to the extent of nearly $10,000,000. Such a calamity as this, like the burning of Chicago in 1871 or the terrible tornado at St. Louis in 1896, is awful to contemplate, yet as the chief of the U. S. Signal Service said in substance a few years ago, no place can say that it is free from the possibilities of a tornado. Where it has struck once it may never strike again, and where it has never been, it may suddenly appear.

The editor was in St. Louis at the time of the great tornado. On that same hot, sultry afternoon at 2 or 3 o'clock, preceding the storm, a remark was made to a gentleman in the office, that "this is good cyclone weather." Then for many minutes he endeavored to prove that there was no possible chance of a cyclone or tornado coming to St. Louis, owing to the great Merrimac Highlands and hills on the west, with the general contour of the country, the large forests, with the deep valley of the Missouri on the north and the Mississippi on the east, yet shortly after 5 o'clock of that same day the tornado burst in its awful fury upon us. Yet neither St. Louis, Galveston or the many places marked by a storm in nearly every state of the Union, may ever be struck again by such a calamity. The wonderfully productive land of the El Campo colony is 100 miles nearly west of Galveston, and not in the direct path of the storm although the great rainfall damaged both cotton and corn there.

Just as much damage has been done to crops by storms in years past, in probably every state in the Union.

Don't be Frightened or Discouraged.

None of our readers, or residents of the rich Coast country, and especially the choice El Campo region, should be frightened away or disheartened. The rich land, the delightful climate, the rail and water transportation are still there, ready for man to cultivate the soil that yields such marvelous crops of cotton, corn, grass, sugar cane, tobacco, rice, fruits and vegetables as well as being such a great stock country. The storm has done great damage in its path, yet the greatest wealth remains in the land and genial skies. In a few short months the farmers can grow a crop that will be worth many dollars per acre, the grass will grow, the flowers bloom as they do there every month in the year, the birds will sing and men in their prosperity will only think as a sad memory of the storm of Sept. 8, 1900.

In a country so productive, yet so healthful, from the fact that being but 50 miles from the Gulf it is fanned and cooled by the delightful Gulf breeze, in a climate where cattle live on the luxuriant grass of the great prairies the entire year, men can accomplish much more with less capital than perhaps few other localities.

The editor spent several days in the Coast country making a personal inspection of many of the cities, towns and farms, talking with farmers, gardeners, and fruit growers, and observing just what was being done. In this number he begins an account of his visit under the title of "A Trip to the Sunny South," which will probably be concluded in our next issue.

Editor American Fruit and Vegetable Journal: I have before me a copy of American Fruit and Vegetable Journal which I like pretty well. It fills the bill better than any paper I have seen lately.

Yours, Truly,

For sale in the Home Nursery, Stark City, Mo.

Don't fail to read our great offer on Inside Cover Page.

SOME COMMENTS.

By Samuel Miller, second vice president Missouri State Horticultural Society.

Editor American Fruit and Vegetable Journal:

I desire to make a few remarks on a "pest number."

"Rabbits."

First I find that the only sure preventive to save young trees from being injured by rabbits, is to wrap them with cloth, wire screen or thick papers.

"Apples in Different Latitudes."

Not everyone takes this into account. That which is a good apple in New York and New England, is only a fall apple here in the latitude of St. Louis, Mo. Smoke

Santa Fe Route

The Atchison, Topeka & Santa Fe Railway System and Connections.

The above map indicates the route the editor took on his recent trip over the Santa Fe System of Missouri, Kansas and Oklahoma to the great Coast Country of Texas, an account of which is begun in this number.

house, Yellow Bellflower and Northern Spy, cannot be kept here later than Dec. 1.

"Sacking Grapes."

Not only are they protected from the birds and insects, but they will keep sound on the vines much longer than if gathered and kept in the house. I have taken bunches of the Jefferson off of the vines near Christmas, in fine condition.

"A Birdless World."

I would not wish to live in a country where there were none of these beautiful songsters. No one is allowed to destroy one on my place, except the cedar bird, which, if left to have its way, would leave us no cherries.

"Grafting Wax."

For nearly eight years I have used the following: Four pounds of resin, two pounds of bees wax, one pound of beef tallow, or one pint of linseed oil, in the place of the tallow. Four pounds of bees wax is just using two pounds for nothing. My preference would be the oil instead of the tallow.

"Persimmons."

I have been trying to secure the best native for thirty years, and now harvest number above the average, ripening from the first of September until mid-winter. The early varieties need no frost to ripen them. The Japanese will not stand our winters. Hope some of our southern fruit growers will make a cross between these foreigners and our natives, that will combine the size and texture, as well as seedless, with the flavor of our best American varieties, for the latter are decidedly the best in that respect.

American Fruit and Vegetable Journal trial subscription for one year, with the **Inland Poultry Journal** as a premium, both on receipt of 25 cents. Address the American Fruit and Vegetable Journal, 713 Masonic Temple, Chicago.

Rocky Ford Enterprise, Colo.
H. W. Barkley, Editor.

Editor American Fruit and Vegetable Journal: Was much pleased to receive your publication. It is a very neatly printed and well edited journal and merits success. H. W. Barkley,
Editor "Rocky Ford Enterprise."

LOW RATE ADVERTISING.

(Acceptable matter under any of the following heads will be taken for 1 cent a word each insertion.)

640 ACRES of land, near Southern R. R., good for peaches, pears, grapes, and vegetables, in the same county as Everglades, Alabama, good health and water; for $1,200. Fine range for cattle and sheep. Apply to L. W. MORAG, Calcert, Ala.

FOR SALE OR EXCHANGE—Six 10 acre garden, fruit or farm tracts, 4 or 5 miles from Plaxhouse and 10 miles northwest of Palatka, Putnam Co., Fla., where there are four railroads and the St. John's river. Can be sold in either 10, 20, 40 or 160 acre tract. Would accept house and lot in suburban town. Address X., care American Fruit and Vegetable Journal, Chicago.

FOR SALE—Under farm of 160 acres in Wayne county, the great fruit section of Illinois, 160 miles east of St. Louis; 120 acres under fence and in cultivation; 40 acres in woodland. Good, well painted frame house, large barn, good family orchard. Church and school adjoins the farm. Three and one-half miles from two railroad towns. Nice location and good land for either orchard or general farming. Price $50 per acre. Easy payments. Also 140 acre farm, well located, in Wayne county, Illinois, with house, barn, etc., and well fenced; nearly all in meadow. Good for either farming or fruit growing. Rural town 1 mile; church and school one mile. Price $40 per acre, one-fourth cash and remainder in payments. Also 1,000 acres of good unimproved timber land, adapted to either fruit, stock or wheat growing, located in Missouri, 120 miles southwest of St. Louis. Desirable location with excellent water. Price $8 per acre. Address J. B., care American Fruit & Vegetable Journal.

FOR SALE OR EXCHANGE—LARGE APPLE ORCHARD NEAR EL DORADO.

In sunny Southern Kansas, the land of good health, beautiful climate, abundance of good water, glorious sunsets, superior educational advantages, good schools and churches.

This orchard consists of about [illegible] trees, nearly all winter apples.

It is located in the center of [illegible] acres, and that portion on a [illegible] stream, thus making a superior location, well drained and [illegible]. Abundance of the best water can be found from six to sixty feet.

The orchard is thirty two miles east of the city of Wichita, in an excellent portion of and only a few miles from the Atchison, Topeka & Santa Fe R. R. switch.

With the exception of a few trees, they are nearly all 12 to 14 years of age. The whole orchard is in a very healthful and [illegible] condition.

The varieties are well assorted and all only the best commercial kinds. The house is a nice [illegible] story frame cottage. Title is good and [illegible] excellent.

The city of El Dorado, located on the banks of the beautiful Walnut river, is one mile south, has 2 railroads, a population of 4,000 and is the capital of Butler, the largest county in Kansas.

The owner has other business.

Address J., care American Fruit and Vegetable Journal, 713 Masonic Temple, Chicago.

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OCTOBER, 1900.

AMERICAN FRUIT AND VEGETABLE JOURNAL

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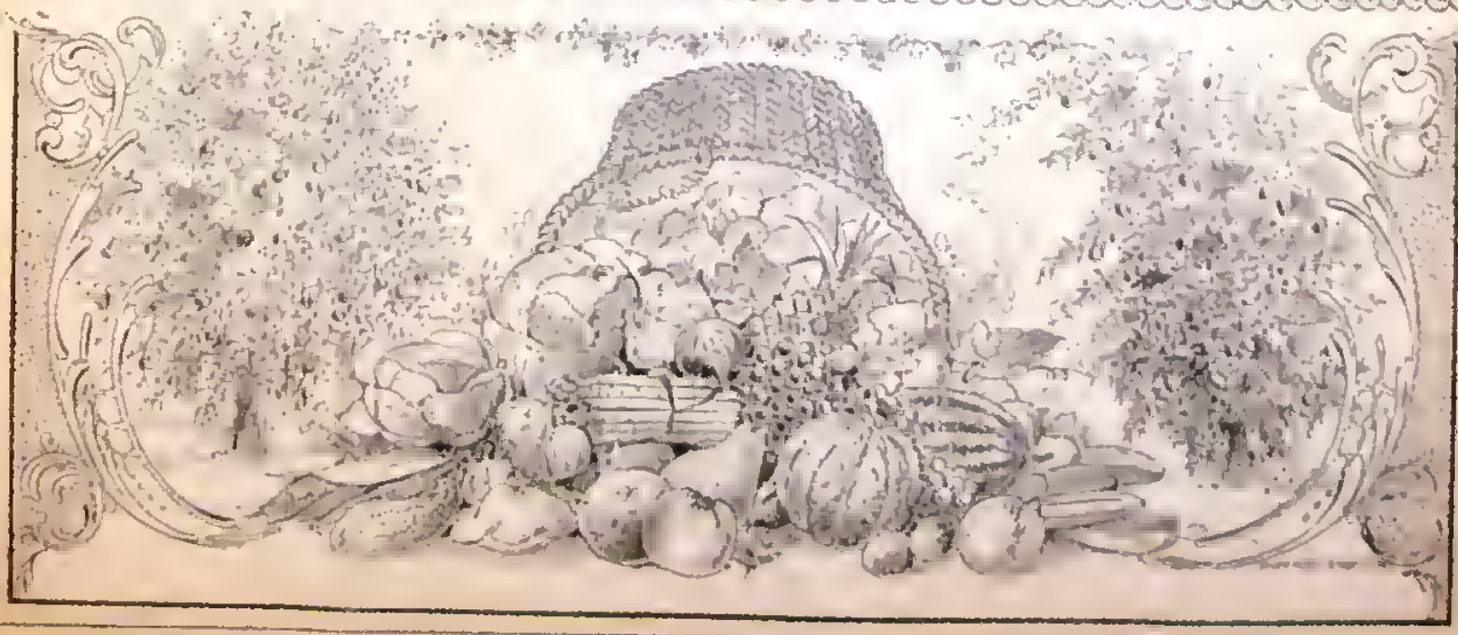
HARVESTING CUCUMBERS, NORTH CAROLINA.



The estimate made on the apple crop of the United States was 80,000,000 barrels. This would make it the largest crop on record. The largest crop grown prior to this was in 1896, when apples sold as low as 40 cents per barrel; but the above estimate will doubtless be very much shortened by the damage done by wind, storm, drouth, worms, warm weather and rot, so seriously reported from many sections.

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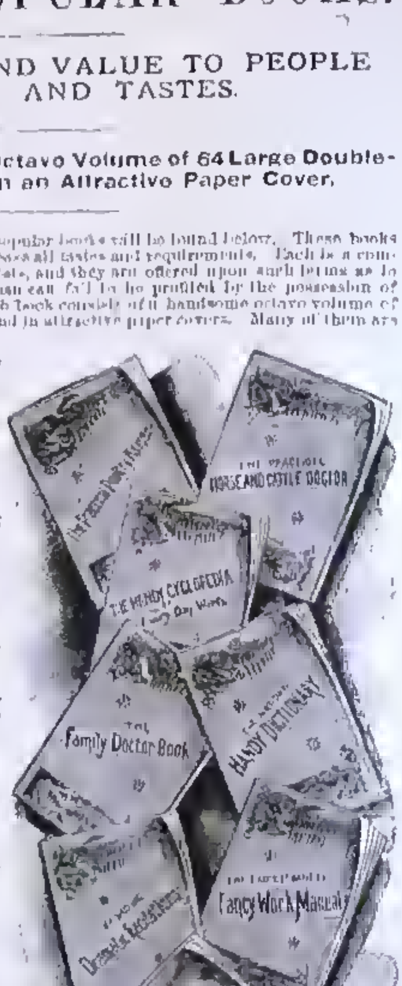

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AMERICAN
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ILLUSTRATIONS. We will gladly receive photographs, cuts or drawings, suitable for reproduction in this Journal, but cannot be responsible for loss or injury.

Ask questions, send us notes, give us your experience. Mark any newspaper paragraphs you wish to be observed.

ADVERTISING RATES will be given upon application.

Editorial.

We can tell more about the size of the apple crop when it is harvested.

* * *

The Michigan peach crop has been very large and of good quality. They have supplied the Chicago market with thousands of baskets of this luscious fruit this season at very low prices.

* * *

Nursery stock is reported as looking better than usual in nearly all western states. All that we saw on our recent trip was very good.

* * *

Maryland and Delaware peach growers report a year of great quantity but poor returns for their big peach crop.

* * *

The apples in the fruit belt along the lake shore are said to be plentiful and of superior quality.

* * *

It is just as important to spray for the second crop of codlin moth as the first.

BLACK ROT ON MISSOURI AND ARKANSAS APPLES.

Within the last few weeks a fungi of black rot has appeared on the apples in many orchards in southern and southeastern Missouri and northern Arkansas, doing great damage to thousands of bushels of what promised to be choice marketable fruit. This rot is described as starting with a small black spot and spreading very rapidly over the apple, until all the fruit on a tree and frequently in a whole orchard is ruined. Some orchardists report their crop as almost a total loss, and that, but, where they had expected to sell it for $8,000 to $10,000. Many of the fruit growers of that section are wondering what this new disease can be, but from the description we think that it is the disease known to many of the orchardists of southern Illinois as "tar mark." This starts as a black spot, rapidly spreading over the apple until soon the whole orchard may be affected. Frequently the black spots do not go deeper than the peeling, except on one side, where it will often crack open and dry out, with the black rot on the sides of the opening. If the fruit is picked early much of it can frequently be saved, and the most of that affected can be either converted into cider, vinegar or dried.

There is, however, another black rot known as the "bitter rot." This starts also as a black spot, spreading rapidly, but soon penetrates the apple until the whole fruit is partly or entirely rotten. The apples, even when only speckled are not fit for cider, vinegar or drying unless these "bitter rot" portions are cut out, as the rot is so disagreeably bitter almost equal to lacto to quinine and tincture of iron mixed, that it spoils everything good it touches.

The editor of the American Fruit and Vegetable Journal has observed these two forms of rot in the orchards of southern Illinois for many years, in fact, first saw the "bitter rot" in that section when he was a child.

Both diseases are particularly noticeable on trees with fruit having a thin or tender peeling and during a wet season. Old orchards are much more affected than young ones, yet we have observed bitter rot on young trees bearing their first crop. We have known orchardists to try the plan of cutting down the trees and burning them to stop the rot, but all to no purpose. Many orchard men consider that their only chance is to grow young orchards to take the place of the old trees which produce the diseased fruit.

Some of the varieties that are easily affected by the "bitter rot," as we have observed, are Willow Twig, Ben Davis, Winesap, Fall Wine, White Bellflower or Hollow Cored Pippin, while some seasons in badly infected and poorly cared for orchards, nearly all varieties become more or less affected.

We have known the "tar mark," or black dry rot, to almost entirely destroy the market value of Stark and Ben Davis in large orchards.

We do not think or claim that these two kinds of rot are the same, but believe they are entirely distinct. Both of these troubles can doubtless be cured by spraying at the right time with the proper kind of a mixture, while good cultivation and proper fertilization will aid the tree to throw off the infection.

Remedy for the Bitter Rot.

Prof. J. C. Whitten, of the Missouri Experiment Station states in the Missouri State Horticultural Report as follows:

"Bitter rot is caused by a fungus or minute parasitic plant, which grows and feeds upon the apple. At the Experiment Station we have been able to reduce the bitter rot one half by spraying with Bordeaux mixture. This consists of 6 pounds of blue vitriol, 4 pounds of lime and 50 gallons of water. Spray just before the buds open in spring, just before the flowers open, just as the last petals fall, and once or twice more, at intervals of ten or twelve days. Some have obtained good results by spraying twice just before the apples begin to ripen. If the diseased fruit is destroyed by bags in the orchard or by gathering and removing the rotten apples there is less liability of the disease spreading in the orchard."

MEETING OF SALINA, KAS., HORTICULTURAL SOCIETY.

Our old friend, Prof. Alfred W. Jones, who was a fellow worker and companion teacher in the Kansas Wesleyan University, and a relative, just one of the numerous Jones family, writes us under date of Sept. 25, that the Saline County, Kansas, Horticultural Society held one of their interesting meetings at his orchard home, which is located about two miles south of the beautiful little city of Salina. During the two years the editor of the American Fruit and Vegetable Journal spent as dean of the Normal department and Professor of English Literature in the University, he had many delightful visits to the great fruit and garden farm where this horticultural society recently met. As we remember now, there were some three or four apple trees, several good sized vineyards and berry patches, with a good selection of peaches, plums, pears etc., in this large fruit plantation, with hundreds of acres of choice rich bottom land that produced great crops of wheat, oats, corn, grass, alfalfa, Kaffir corn, sweet and Irish potatoes. The farm was beautifully situated on the banks of the Smoky Hill river, which afforded an inexhaustible supply of good water for stock and doubtless acted as a subirrigator more or less to the land in the "first bottom." Trees chiefly cottonwood, walnut and elm, if we remember correctly, lined the banks of this crooked stream and bent over the water very beautifully, while here and there twined a wild grape vine that hung its graceful festoons from its live, leafy trellis.

The venerable father and mother who lived in the peaceful tree-embowered home, had come to that land of rich soil and sunshine in the prime of life, pioneers, there to contend with the Indian as to who should hold sway. By and by came the Union Pacific R. R. the war had ended, the long train of emigrant wagons, the prairie schooners, as they were called, in addition the onward march of the "American race" Salina was located, became a village, then a fair sized town, and at length, as now, laid claim to be a little city with some quasi population, with good schools, churches, colleges, large halls, and the usual lines of business.

Perhaps the larger number of the trees in this orchard are Missouri Pippin, Ben Davis and Wine Sap yet many other varieties were represented. Some large crops have been produced and good prices obtained. Apple growing in Kansas, west of Salina, is more or less uncertain, and is considered as yet somewhat of an experiment, unless in a favored location.

FIGHT THE BELGIAN HARE CRAZE.

Nurserymen, orchardists, gardners and horticultural societies, and in fact every one who loves either fruit or vegetables should begin a fight against the Belgian hare, before it has become so numerous, like its brother the common wild cottontail rabbit, that it will be next to impossible to exterminate them.

All the hare family belong to the order rodents, or gnawers. And they all seem born and bred to gnaw fruit trees and eat vegetables.

The editor of the American Fruit and Vegetable Journal has seen thousands of fine young trees in both the nursery and orchard destroyed by these detestable rodents. Young orchards, even 3 years old, have been almost entirely destroyed in one winter, in a very few days, he lost nearly 2000 apple trees in his own orchard, caused by the "rabbit," "bunny," "jackrabbit," "grass eating," American hare, the common cottontail," and his big brother jack rabbit.

The fruit tree growers of Indiana, Illinois, Iowa, Missouri, Kansas, Nebraska and many other states need no introduction to the rabbit scourge, as they are too familiar with this pest that has destroyed millions of trees and still continues its work of destruction.

The Belgian hare is simply a brown rabbit. "A rose by any other name would smell as sweet." And so each member of the hare family retains the chief characteristics of the family—to gnaw fruit trees, eat vegetables and be wonderfully productive. All that can be said in favor of the Belgian hare can as well be said of the common "cotton tail" and jack rabbit, or the Australian rabbit, which has proved such a great curse to Australia. All that can be said against these common American and Australian hares or rabbits can as well be said about this brown rabbit, the Belgian hare.

Let fruit and vegetable growers everywhere petition their legislatures to enact laws, making it a criminal offense to breed this new pest, and in the meantime use the shot gun and dog freely.

A TRIP TO THE SUNNY SOUTH.

(Second paper.)

After several days delightful sojourn at the large Kansas orchard, the editor resumed his journey alone to the South land.

Down the wonderfully fertile valley of the Walnut river sped our good Santa Fe train on the morning of Aug. 13, through great fields of corn, grass and alfalfa, in many stacks, indicating the big wheat and oats harvest.

The well-improved farms, the great herds of fat cattle, the flourishing towns, the general indications of business and prosperity, told a story plainer than words, that this is one of the rich sections of the great Sunflower state.

The thrifty towns of Augusta, Douglas and Winfield were passed and Arkansas City, at the junction of the Walnut and Arkansas river, was reached, where we met the regular Chicago & Galveston through train, which was fully as good in all its equipments as when it leaves the Dearborn street station in Chicago.

Oklahoma.

Now we cross the sandy Arkansas river and are soon in Oklahoma, the wonderland of the nineteenth century. "The nation that was born in a day;" that is still an infant, and yet contains more people and more acres of rich productive land than many old states.

Near the line one of the government schools for the Indians is located, called the Chilocco School; the great stone buildings were plainly in sight. Improved farms, good business towns, elevators, mills, cotton gins, etc., gave evidence of the marvelous growth. While extending on either side of the railroad for miles and miles, were the great fields now being plowed for a new crop, from which had been recently harvested the wonderful wheat crop of 1900. Although hundreds of car loads of wheat had been sent to market, yet thousands of stacks remained still to be threshed, while the elevators, mills and railroads were doing their best to handle the crop.

Excellent corn, extensive pasture fields covered with the native "blue stem," over which roamed herds of choice fat cattle, added to the picture of peace, plenty and progress.

Here and there a dark green field could be seen, with plants two or three feet high, large leaves, many white or cream colored, also pink blossoms. This was cotton. We were on the dividing line between the two great staple crops, corn and cotton that rule the North and South. Here could be observed a place where were grown corn, wheat, oats, millet, kafir corn, and cotton.

The choicest peaches, melons and regetables are produced.

The following from the pen of a writer in a recent number of the "Atlantic," will but emphasize much that I saw:

"There is no need to go to Europe for cheap living while Oklahoma exists. Distance from the large markets makes it the best place for house keepers with a slen-

Courtesy of Santa Fe.

IN THE SHADOW OF THE OKLAHOMA APPLE TREE, NEARLY FOUR YEARS OLD.

There were over 4,000,000 fruit trees growing in Oklahoma, 4 years ago, and the number has increased with the general development of the country.

der purse. All home-grown foods of a perishable nature can be had for refreshingly low prices. Some of these I quote: Watermelon notwithstanding that several hundred freight cars of this juicy fruit roll northward to Kansas City, can be bought at any time from July to cold weather for 5 cents each and these of a size and sweetness unsurpassed. Muskmelons, delicious as nectar, are 5 cents per dozen, although these too are sent away literally in carloads. Grapes—also, this luscious crop is nearly given away—1 cent per pound for the best. The reason for this humble price attached to so fine a fruit is that the crop matures and is in its prime during the heat of August, and shipment is impossible except in refrigerator cars, which are too expensive.

Perry, Guthrie, Norman and Oklahoma City are thriving towns, giving many indications of thrift and progress. We were well impressed with the excellent school and college buildings, which plainly proved the spirit of the people. The school, church and social privileges already afforded, are equal to that afforded in many old states. About 2:45 p.m. the Red River was crossed on a great steel bridge, and we arrived at Purcell in the Indian Territory.

Indian Territory.

We had expected great things of all the country traversed, but it was indeed a surprise to see such crops and business towns in the land of the Red man. Yet nearly all this farming and business is being done by white men. The rich bottom lands are leased of the Indians, on these lands are grown great crops of cotton and corn. We were reliably informed that an immense business was done by the merchants in the various towns. Ardmore, a town in the territory, is said to have 12,000 population and claims to handle more cotton than any other inland place in the country. Perhaps the greatest surprise to one is the fine class of people one meets in many of these towns. Business men that would do credit to most any place, while beautiful, neatly dressed ladies indicated that the white man and his family had taken all the elements possible of civilization with them, to this land of the Indians.

Late in the afternoon, Gainesville, Tex., was reached, a very white awake town with metropolitan airs. Here we saw some of the largest and choicest peaches, billed for shipment to northern points, of probably anything before observed this season.

"The shades of night drew on apace" in northern Texas, 'mid its great corn, cotton, wheat and pasture fields.

At Fort Worth.

At 9:15 p. m. our train arrived at Fort Worth where we were met by Mr. J. D. Baker, the nurseryman, whose guest we were. After a refreshing night's rest, we were conducted by Mr. Baker with horse and buggy over many points of interest in the very progressive city of Fort Worth and thence to the country to view their nursery, orchard and farm. We were shown the Eagle plum which grows so well and produces such excellent crops of fruit. We ate the fruit from the tree and can testify both to the vigor of the tree and the excellent quality of the fruit.

We viewed the new evergreen, the Bermuda Hybrid, a picture of which we hope to give our readers at some future time. This is indeed a beautiful tree and very ornamental. We doubt if a picture can do justice to it. It is inclined to be a dwarf, not growing much higher than six to eight feet. This beautiful evergreen is a hybrid or cross between the Golden Arborvitæ and Rethospora squarrosa. That this hybridization is possible has been denied by some tree growers, yet it is unquestionably true as we had conclusive proof by our observation, for these trees are all grown from cuttings taken from grown or growing trees, but every once in a while, as if

to prove their origin, a tree would "sport" back and send out one branch of the Golden Arborvitæ and another of the Retinospora squarrosa from the same cutting. We never saw anything like this peculiar phenomena. It is indeed a wonder worth observing. We were shown how these trees were grown by the thousands for market. From plot to plot of choice ornamental trees and shrubs we went, finding much of interest to any tree lover. Then we visited the orchard and vineyard filled with very choice peach, plum and pear trees and grape vines. The greater part of the peach crop had ripened and passed into market, yet enough of the luscious fruit of all kinds remained to give an excellent idea and taste of its superior qualities. Such peaches, plums, grapes and melons as they do grow in that beautiful country, "where every prospect pleases and only man is

Courtesy of Santa Fe.

PEAR ORCHARD OF MR. J. J. SHIRLEY AS IT APPEARED THREE YEARS AGO, NEAR ALVIN, TEXAS.

Mr. Shirley reports that about 50 to 60 trees are set to the acre, and at ten years old they produce 5 to 10 bushels of pears to the tree. He has one Kelfer tree ten years of age, which last season yielded 17 bushels, worth $30; also one Le Conte tree at ten years yielded 16 bushels, for which he got $15. These were his best trees, and should not be taken as a standard by which to estimate average proceeds. In 1897 Texas buyers paid $1 bushel for the pears, boxed and put into the cars at the point of shipment.

vile." Don't infer that there are not many good people here.

One part of Mr. Baker's grounds contains a pretty grove of natural oaks, out of which has been made a nice little addition to the city of Fort Worth where have been built many attractive homes. In one of these shady corners a tasty, cozy cottage had been erected by Mr. Baker for his sister who lived here "'mid the shade of those trees close up to nature's heart."

After a most excellent dinner, of the choicest products of the land, cultivated by the genial spirits of all present, we then visited the rose department of the nursery. How we do wish that we could thoroughly describe this magnificent display of perpetual blooming roses. There were several acres of the choicest roses of all hues, tints, colors, shades and forms it seemed, in full bloom. Here they continued from early spring to late fall to all their wonderful beauty. In the North we have our great rose blooming time but once a year and that usually from the middle of May until the middle of June, with a few monthly roses that bloom sparingly on if we care for them well. But here the rose is perfectly at home. It seems and blooms from spring until fall without ceasing, resting only during the short winter. We know of no rose display that surpassed this unless that of the Wooded Island as maintained at Jackson Park on the old grounds of the World's Fair in Chicago. After viewing the excellent tree growth, many beautiful lawns, nice farms and fine houses and public buildings of Fort Worth, we resumed our journey at 9.35 p. m. on the south-bound Santa Fe.

Southern Texas.

Daylight dawned in southern Texas, near Bellville, north of Galveston. The towns of Brenham, Sealy, Rosenberg, Alvin, etc., were passed and noted, as well as the intervening country. The whole scene forest and climate seemed changed from northern Texas. The great live oaks and in fact nearly all other trees were dressed in Spanish moss. The land was chiefly very level and much of it flat prairie covered with grass. A great amount of rain had fallen, and owing to the level country and poor drainage water was standing everywhere. Fields, gardens, and even roads were frequently in the water. Crops were often ruined by the water, yet now and then we saw an excellent field of corn, cane or cotton. At Alvin, where the change is made for Houston, there are about 2,500 acres of pear orchard, nearly 100 acres of strawberry plants, many fig trees and some other varieties of fruit. Some of these orchards looked well, but the great rain fall of both last season and this has done much damage, while many pear orchards have seriously suffered with the blight.

The ride on the long bridge or trestle work from the mainland of Virginia Point to Galveston, about two and a quarter miles, was peculiarly interesting. Arriving at Galveston at 10 a. m. we immediately determined to see the city and well did we improve the time. A ride on several electric cars running to various parts of the city and both long and short walks to places of interest gave a very clear and comprehensive idea of this city on the flat sand bar over two miles from the mainland on which Galveston is located. Down at the wharf great vessels were loading, while alongside the wharf stretched the railroad track to both give and receive freight to and from the vessels. We went on board the great ship Alamo of the Mallory line and drank in a breath of fine salt breeze and enjoyed a good view of the Gulf of Mexico.

Destruction of Galveston.

The time of this visit was Aug. 15. The terrible storm of which all our readers have read, occurred Sept. 8th. Our visit makes the account of the work of destruction very real. Even the great ship Alamo is said to have been blown and washed upon the mainland, while the streets over which we walked and many of the buildings we visited were destroyed.

Houston.

At 5.15 p. m. we left for Houston. Early next morning we started out to view this excellently built, well headed and great business center of Texas, which we believe is destined to be one of the largest and best cities of the South. Houston stands on a well drained and reasonably high location far above any danger of floods or tidal waves. It is connected with the Gulf of Mexico by Buffalo Bayou and Trinity Bay, upon which the government is now expending $6,500,000 for an improvement which will enable ocean vessels to discharge and load freight at Houston. Already thousands of tons of freight are towed down this bayou on barges by little steam tugs, there to be reloaded on the ocean vessels.

Houston, like Fort Worth, is a good business town, having wide, well kept streets, good buildings, excellent artesian water, good drainage, thirteen railroads, a first class street car service, gas, electric light, extensive railroad shops, some manufacturing interests, while one is attracted by the many nice homes, well kept lawns, beautiful shade trees and the general indication of business and progress.

We do not see why Houston should not be a city of 200,000 population and that, too, before twenty years. How much these great trade centers of import and export will mean to the West and South! The markets of the world will be opened to

Courtesy of Santa Fe.

A YOUNG APPLE ORCHARD IN OKLAHOMA.

Fall in foreground showing the trees.

them the same as to Boston, New York and New Orleans. As to Houston it has a better, safer and more healthful location than perhaps any other place that can bid for the markets of the West and South on the one hand and the markets of the world through the Gulf of Mexico on the other, while the products of the Dakotas, Nebraska, Kansas, Colorado, New Mexico and all of Texas can reach the seaboard at nearly one-third the distance than by rail to New York.

To El Campo.

The ride from Houston to El Campo via the New York, Texas & Mexican R. R., a branch of the Southern Pacific, was made in about three hours, a distance of nearly 75 miles. The roadbed, equipment and service of this railroad are very good, which passes through a region with rich soil and great possibilities. Nearly twenty miles from Houston a very large sugar mill was passed surrounded by hundreds of acres of the finest quality of sugar cane. This sugar mill is said to be one of the largest and best equipped of any in the South and represents probably over one million dollars of investment. Adjoining this sugar plantation is another large one owned by the Messrs. Ellis.

The country we traversed was quite level, prairie covered with a good growth of grass, and has been used for grazing when used at all. There are many small streams lined with trees, so that drainage can be easily made.

At El Campo.

We arrived at El Campo about 12 m. is now. This is a town of perhaps 1,500

lation and nearly six years old. It is located in the midst of a great rich prairie country, has three good cotton gins, numerous stores, three churches, a school house, newspaper, bank, postoffice, many neat new homes, a beautiful little park, ornamented with the Umbrella China and other rapidly growing trees peculiar to the South.

We stopped at the neat home of Mr. C. Fisk, the genial and efficient local manager of the El Campo colony lands, who has done such excellent work for the building up of the country and town, and that too in the face of the most unreasonable opposition.

A College.

A college has been planned by the colonists, to which one wealthy gentleman, the owner of most of the colonization lands, has agreed to give some $10,000 to $20,000 for its establishment, but owing to the great damage done the crops by the excessive rains, the farmers and others do not now feel able to meet their part of the subscriptions, so the work of beginning the college is postponed another year.

The Country.

The appearance of the country for miles around El Campo is almost exactly like that of the richest portion of Central Illinois. It is quite level, yet drains well if only a general and systematic plan will be followed. Two streams have their source near the town, and can be utilized well for drainage purposes. The soil in some direction from the town is a "black waxy," while in others it is a "black sandy," yet both are exceedingly productive. Where the roads are graded up and the water drained off the soil soon dries out and makes good smooth roads, but owing to the lack of this many of the roads remind one of Central Illinois twenty years ago.

Stock.

On account of the vast acreage of excellent wild grass, which appeared to be the regular "blue stem," cattle live on it the entire year, without other feed. In all this region, covering hundreds of square miles, there are many men who have made great fortunes and are now "cattle kings." Many of these men live either in Fort Worth, Dallas, Houston, Galveston or some other city, while on the ranch may be found a large dwelling, barns, etc., with a manager in charge of it all.

What the Colonists Are Doing.

Many of those who have bought land and settled came here poor, in many instances not being able to pay more than from one-eighth to one-half of the price of 80 or 160 acres of land. Yet many of these people have now good houses and barns, with nice orchards, some good stock, with corn, vegetables and fruit in abundance.

Cotton looked real well, notwithstanding the fact that it had been too wet. It was very large and in full bloom, while some fields had plenty ready for picking. The yield is from one-half bale to one and one-half bales per acre, and it is now worth about $50 per bale, while the seed brings frequently $10 to $15 per acre.

Production.

The rich soil will produce corn, oats, grass, cotton, sugar cane, rice, peaches, plums, grapes, figs, Irish potatoes, sweet potatoes, cabbage, and in fact nearly everything adapted to the climate.

The growth of peach, shade, fig and many other trees as well as grape vines and ornamental stock was almost incredible. We were shown two, four and five year old peach trees in the orchard of Capt. Bounds that looked about the same size as trees twice as old in Missouri, Kansas or Illinois.

The yield of cabbage and sweet potatoes is simply too great to relate.

What Some Have Done.

We visited two charming farm homes south of El Campo nearly two miles, where the owners had surely done their best to make them attractive. Each place had been purchased by a man of limited means, so that what they had accomplished was all the more surprising.

One of these places was owned by Capt. Bounds, on which he had a most excellent field of cotton, good corn, nice cattle, a good vineyard and a peach, plum and pear orchard that was a great satisfaction to view.

His home was a very neat, well kept cottage, surrounded by beautiful shrubbery, while directly in front of the house was a most charming rose garden, filled with the most beautiful and fragrant roses that continued to bloom nearly all the year. Mrs. Bounds told us of picking a lovely bouquet on last New Year's day, while the Captain related picking some large strawberries on the same date.

The Captain showed us his seed beds, where he had just sown his cabbage seed preparatory to growing the crop for the winter market. It is related that cabbage frequently pays the grower in the Coast country $100 per acre.

The Captain also showed me several acres of choice sweet potatoes that he thought would yield 300 to 400 bushels per acre, as he had obtained more than that in other years.

On a nearly farm of 80 acres lived an industrious young couple who had a nice cottage, good barn, all well fenced, and such a profusion of roses, other flowers, ornamental shrubbery, with large peach, plum and pear orchard, vineyard, berry patch, etc., and then to think that it had all been done in about three or four years seemed almost incredible, and that, too, on a very small investment and by a man who came here poor.

We were told of one poor man, who came here with a family and no money rented land, and the first year produced 27 bales of cotton, thus got a start, bought a farm on payments, and now has a good 150-acre well improved and paying farm of his own.

The Outlook.

We believe the soil and climate are fully as good as Iowa, Illinois or Indiana, and that where the land is drained as it has been in those states, it can be made into a regular garden.

It is far enough from the Gulf of Mexico, about 40 miles, to be safe and yet close enough to have the comfort of the delightful, healthful and refreshing Gulf breeze.

The roads can be easily graded up and ditches dug, fully as cheap as in Indiana or Illinois, and when this is done the roads become good, even in wet weather. What is needed is several hundred families of determination, energy and each one with some ready cash to come here and work together. The struggle is a difficult one here as elsewhere without money to make a start, yet we believe the possibilities in the growing of cotton, rice, stock, fruit, vegetables, and general farming are very great.

The day will come we truly believe when this land will be worth $100 and more, per acre and when it will be developed into a veritable garden and Canada in blossom as the rose."

Courtesy of Santa Fe.

A SHADY PATH IN THE TEXAS COAST COUNTRY.

Mr. Sampson, near Alvin, has 23,000 pear trees, and many orchards run from 2,000 to 10,000.

The past spring the Northern Pacific Railroad Company is said to have made the most extensive planting of trees ever performed by one company; 530,000 trees were planted along the right of way, chiefly in North Dakota, while they are planning to plant nearly 300,000 more next year.

The Valencia orange crop is reported 1,000,000 cases short. Therefore England and Germany are beginning to enquire for our California and Florida fruit.

Cannery News.

THE MARKET OUTLOOK.

Never did two seasons differ more in market conditions than those of 1899 and 1900, states the Baltimore Trade in its recent review of the canned goods business. Last year the buyers and their agents owned and controlled everything, even before it was packed. As a result, the jobbing heads kept a sharp lookout on the entire procedure of the season, and a sort of generalship was practiced not only in the management of the market, but in the distribution of the information respecting it.

The article in which the jobbers were most largely interested was watched in its season with the greatest care, but not to the forgetfulness of other articles which were being packed. This year the buyers seem to have a sort of apathy towards the active development of the canned supply; except in one article at a time. And the market, therefore, has to be judged by the title of crop and demand on some special article one after another.

Little Heard of Corn.

Take corn, for instance. There has not been a year in a dozen when we have heard so little of it. There seems to be neither anxiety of demand nor a lack of demand. And yet this is not because it is going out of use, but because the jobbers as a rule place future contracts for it for about an average amount of their actual anticipated requirements. This in turn has given the packers a call for about all they will get from the present crop conditions of this year. Hence both packer and buyer are out of the anxious market in regard to the movement of corn.

All Out for Peaches.

Within the last two weeks despite the known fact that tomatoes are in a very extraordinary position, they have really been relegated into coldness by the desire of the buyers to get possession of peaches. It is fully fifteen years since public attention of the merchants has turned so considerably to this fruit head, and whilst packers have shipped about all they have packed as fast as they got it into the, some of the largest jobbing houses of the country still have their personal agents going through the packing sections seeking to get control of large blocks of the lower grades of this fruit. They are even bidding two and a half cents higher than packers' quotations or asking prices yet they are not getting them, for the best period of low grade peaches has passed for the season, and the quality of fruit now being gotten from the orchards is really too good to put into any seconds or plus, and the culls and seconds are only a small percentage of the receipts.

We can, therefore, easily see a speculative boom in plus, seconds and offgrade peaches and one which will continue probably for two or three months or until the bulk of the retail trade is supplied.

Tomatoes Will Advance.

Meantime tomatoes in their calmness have the full confidence of the packer, who is certain that prices will continue to advance, and is therefore not making any sacrifices to dispose of his goods. Whilst the reports in general from the tomato belt across the continent are much more cheerful and satisfactory than they were, the aggregate pack of tomatoes being gotten up is considerably deficient, and the condition of the ripening fruit on the vines is such as does not promise a glut of the vegetable at any of the canneries.

On top of all the conditions that have tended to discourage tomato packing that is, crop conditions and the great peach crop in Maryland, it is now evident that the tomato pack in New Jersey will be reduced from the same causes that are operating against it in Delaware and Maryland.

New Jersey is blessed with the best crop of peaches she has probably had in twenty-five years; the fruit is of excellent quality and the packers will turn as it as children turn to sugar plums.

There is no risk in buying tomatoes at present prices, although they are higher than other years in the average of the past decade. For tomatoes are going to be a valuable property all through the fall.

A Bright Future.

We are glad to believe that there are indications of a return of activity to most of the industrial lines. It is very sad, but still very true, that the existence of war increases the demand for nearly all products, therefore makes work for the laboring classes, profit for the employer, and market for all producers. So much is this the case at present that it bids fair to influence the ill influence of a presidential election next year; and the outlook for the fall is now very bright.

Turning to Fruit.

Corn is looking very poorly for what is still in sight in this section and packers in the upper part of the state are turning their attention to fruits to eke out the balance of the season. There has been an extraordinary crop of fruits of nearly all kinds in the western part of Maryland and Pennsylvania. Apples are in large supply, but as the crop in general throughout the country is below the average quantity there will be demand for all that Pennsylvania can possibly secure.

We suppose western Maryland never sent so many peaches in this market in any other season. The fruit is excellent and visitors to Chittenden have ocular demonstration of the excellence of this crop, and the vigour to which it has developed in that region.

The parks and lawns of Chicago are very beautiful now owing to the favorable weather there has been for the growth of grass and plant life generally.

Oswego county, N. Y., estimates its apple crop at fifteen barrels.

Courtesy of Santa Fe.

IN BEAUTIFUL OKLAHOMA

SUBSCRIBERS, HELP!

We wish to largely increase our subscription list. To do this we must get fruit and vegetable growers acquainted with our paper. We therefore ask each one of our subscribers to send us the names of two intelligent persons who would probably be interested in the American Fruit and Vegetable Journal. To each one of these persons we will send our paper absolutely free for three months and then stop it unless they wish it continued. To every subscriber who will thus accommodate us we will send as a premium for their trouble, absolutely free, their choice of any of the books mentioned under the heading "Subscribers, Help!" on page 18.

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of the grass. What treatment does the pear tree ask for? That is what we want to find out. Did the old tree really receive ideal treatment?

PROSECUTIONS FOR ADULTERATION OF FOOD.

The following cases brought at Washington, D. C., for violation of the government pure food laws, are reported by the Grape Belt:

An olive oil, Monograin brand, Martin Freres, manufacturer, labeled olive oil; analysis showed it to be strictly cotton seed oil; label showed it to be of French manufacture, whereas the oil was put up in America. A jelly, Falcon brand, Falcon Preserving Company, manufacturer, adulterated with 32 per cent of glucose. Honey, California Honey brand, California Packing Company, manufacturer, adulterated with glucose. A peach jam, Anderson Pres. Co., manufacturer, adulterated with 37 per cent of glucose. A honey, Olympia brand, Seattle & P. Sd. Pkg. Co., manufacturer, adulterated with 34 per cent of glucose. An olive oil, Durfee brand, Durand & Fils, manufacturers, marked olive oil, analysis showed pure cotton seed oil. A jelly, Peach Blossom brand, adulterated with 37 per cent of glucose. A jelly, runner brand, Pacific Coast Syrup Company, manufacturer, adulterated with 31 per cent of glucose and artificial coloring. A currant jelly, Lang & Co., manufacturers, adulterated with 20 per cent of glucose and artificial coloring. A blackberry jelly, T. A. Snyder & Co., manufacturer, adulterated with 37 per cent of glucose and artificial coloring. A currant jelly, Wadhams & Kerr, manufacturers, showed no fruit, 31.04 per cent of glucose, 13.5 per cent of sucrose and a starch base.

In every case a $50 fine including costs, was imposed. A number of other cases is in the hands of the prosecuting attorneys.

WONDERFUL VALUE OF THE BOBOLINK.

The Farmer and Fruitgrower's Friend

It is well stated by Self-Culture that the bobolink's food is chiefly the grubs and other destructive insects of the field and meadows, and therefore the bird must be very beneficial to agriculturists. Suppose that a pair of bobolinks arriving in the Empire State on the 5th of May remain until the 5th of September before returning to the South; and that by the 5th of June their brood of four young break from the eggshells to carry with its mill their parents depart. Let us suppose further that the birds are awake each day, or mainly interested about securing food, from 5 o'clock in the morning until 6 in the afternoon (thirteen hours. At the very lowest average each bird will require one insect every six minutes, or ten per hour, which gives us 130 for the day. Granting that much, both old birds would destroy 260 insects in one day; and for the 120 days they abide with us the total amounts to 31,200. Providing that the four young disposed of no more food than the parents which is a most doubtful truth—during the ninety days they are present the brood would require 46,800 insects, which, added to that of the old birds, makes a total of 78,000. Now, if each insect is a menace to vegetation to the extent of a half cent, one family of six bobolinks would in four months benefit agriculture just $390. Let us carry the thought still farther, imagine that a county contains 400 square miles, which on the average sustains a pair of bobolinks and their family of four for every square mile and that each family while in the North destroys 78,000 insects. Then the 400 families within the county would slay in the same time 31,200,000 pests of agriculture. Financially, if every insect represents a half cent of destruction, the bobolinks of that county would in a third of a year be worth $15,600, while if my estimate was more precise the sum would doubtless be nearer $30,000. This is merely a representation of the economical value of one of that county's insectivorous birds; and the figures presented will surely furnish thought for whoever belittles the worth of the feathered throng.

MICHIGAN POTATO CROP.

It is reported that the potato crop in Michigan is looking very favorable at this time. There will be some Eastern calls for potatoes, in northern Michigan the crop will be unusually good if the frost holds off. There has been plenty of rain and the tubers may grow too large; large potatoes are liable to be hollow and buyers do not like them. There are no less than 360 varieties of potatoes raised in Michigan, Hebrons and Burals being the leading and most desirable varieties. Rutabagas are all right but they are partially run out. The Nonesuch, a new variety, is being offered on the city market at Grand Rapids now. A few Early Rose potatoes are still raised. Kansas City Produce Review.

GOOD RASPBERRIES AND BLACKBERRIES FOR INDIANA.

The Indiana Experiment Station states the following raspberries are good for home use or market—Miller, Cuthbert, Columbian, Golden Queen, Alpha, Conrath, Eureka, Kansas and Nemaha.

The Golden Queen is by far the best of the cream colored varieties.

While of the blackberries for the family garden the following varieties are recommended: Agawam, Early King, Erie, Snyder and Taylor. Lucretia is the only dewberry recommended for general cultivation.

GOOD PROSPECTS FOR MEXICAN ORANGES.

A leading St. Louis commission merchant stated to a representative of the Kansas City Packer that "There will be a few cars of early oranges which will come forward this month. We have now several cars in transit, and these will be followed by shipments every day. The heavy movement, though, will not commence until next month. During October we expect to rush forward shipments and will be able to supply the trade with what oranges they will need. The above all refers to oranges from Central Mexico. This fruit is known to most of the trade as La Buena fruit, but is shipped from several other points, although the quality is very similar and all this fruit is fine. Fruit from this section is packed in Florida size boxes, and we expect sizes this season to run very fine.

"Sonora oranges from Mexico will not be in the market until the last of October. We will have a larger supply of this fruit than ever before, as we will have the selling of the bulk of the fruit from that section this season. The Sonora orange has come into great favor the last few seasons, and we are now having many inquiries regarding this fruit, and have taken some large orders from trade that will use nothing else but Sonora oranges as soon as they can get them."

THE OLEANDER IN FLORIDA.

Of all the rustly growth flowering plants which succeed universally in Florida sand, the Oleander stands almost without a rival, states E. N. Reasoner, in the Florida Agriculturist.

It is almost as sweet as the rose in many varieties and is certainly extremely beautiful in every sort known.

As to the fear of poison from the Oleander, that is all nonsense; the juice may be poisonous, and doubtless is slightly, but the chances of children chewing so bitter a thing as Oleander wood or foliage is almost beyond reason.

The Oleander thrives on any soil in Florida not too wet; that is, it will grow as well as almost any plant can, on the poorest of white sand, and will luxuriate on the best orange land, hammocks, or improved flatwoods. The colors range through most delicate shades of light yellow and pink to the dark purplish red, and the white sorts are variable in size, form and throat markings.

As a cemetery shrub for Florida and the warmer parts of the Gulf Coast the Oleander is a good subject, standing neglect better than could be expected, owing to its vigorous constitution.

Even South Dakota is growing good apples. And now comes one Jas. Wells, from the Black Hills country, and states that he will have 400 barrels of good fruit this year.

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Horticulture in Public Schools.

OUR WINTER BIRDS.

By Prof. G. W. Fields, Rhode Island College.

Did you ever wonder why there are fewer birds with us in winter than in summer? Perhaps you think it is because the birds have wings and so are free to go where they wish; and their choice is to go to the far South where the trees are always in bloom, where the leaves are always green; that birds do not care for skating, coasting and snowballing, so they take the winter time to visit the orange groves of Cuba, the coffee plantations of Brazil, the depths of the tropical forests of the Orinoco river, or to see the monkeys and crocodiles of Central America. But this is not the cause. Probably it is merely a "case of bread and butter" for the birds. They must have food for themselves and, above all, a safe place to lay their eggs and rear their young. Now the birds which are with us in the summer are those which come up from the South because it is safer for them to build their nests in our dooryards, and in our woods and fields, than it is in the South. But by far the greatest number of birds pass beyond us still farther north and lay their eggs in the uninhabited barren marshes and rocky islands of Labrador and Greenland, and in the stunted spruces from Newfoundland to Alaska. Here they rear their young in comparative safety. But as the winter comes on those birds which live on insect food find that there are signs of a famine. The mosquitoes and black flies which make life a burden for man and beast in those regions begin to become scarce, the seeds of weeds and other plants to be covered by the deep snow, and the birds are compelled by hunger to move southward in order to get food. Old experienced heads lead off as guides, the others follow as best they can. Many get lost, and perish on the way. Birds then go South at the approach of winter to obtain food; they return North, keeping pace with the retreat of winter and the appearance of insect food, for the purpose of reaching a place where they have learned from experience that it is safe to build their homes. Some birds travel enormous distances; they may go from Greenland to South America. There are some, however, which do not have to take such long journeys for the benefit of their health. Those spend the summer in the far North, though some of them no further away than Nova Scotia, and have become so well adapted to their surroundings as to need only a short winter vacation trip away from homebodi ness. Some of these birds we can see almost any day during late fall, winter and early spring. Such, for example, are the black snow bird, the brown creeper, the nuthatches, the golden crowned kinglets and others. There are some birds which seem to remain with us during the entire year, and, therefore, are called permanent residents, such as, for example, the crow, bluejay, screech-owl, flicker, goldfinch and others. But those people who have studied birds most are inclined to believe that the crows, and other birds just mentioned, which we see in winter, are those which have come down from the North, bringing their young families with them, to spend the winter as our guests, while those with whom we were acquainted in the summer have gone down to pass the winter in our Southern states. In spring those which have been with us during winter return to the North, while those which nested here in summer come back to resume their housekeeping under our protection. So you see almost all birds travel a longer or a shorter distance north and south every year; this change of location is called a migration, and birds are migratory creatures. The purposes of the migration are to find the necessary food and to secure a safe place to rear the young.

WINTER BIRDS

I wish to introduce to you some of these birds which come to us in winter for food and protection. With some of these you may already have a speaking or rather a bowing acquaintance, but you may well still further cultivate their friendship and give them the benefit of your protection.

How happens it that all birds are not forced to go South to find the proper food? Why is it that flocks of goldfinches remain with us the year round? We can readily recognize them in summer by the bright golden body and black wings and the black cap; but in winter they are not so brightly arrayed, the prevailing color then is very properly old gold with brown trimmings more in harmony with the brown and dead grass color of the fields. Why is this? It is because in times past the ancestors of these birds which were not closely of the color of the surrounding objects were caught and eaten by the hungry birds of prey, and only those were left whose colors made them hardest to be seen. The young are most likely to be of a color similar to the parent, and to have advantage of protection through their color. Be sure to notice the next bird and see if its peculiar color with has the surroundings, thus making him more easily overlooked. Do you associate the bright yellow goldfinch with the yellow flowers of midsummer, and the same bird in brownish winter plumage with the brown leaves and the dried seed cups of winter? Have you noticed what sort of food the goldfinch eats? If not, do not fail to do so at the first opportunity. Be on the lookout for that small flock of birds of about sparrow bird size which travels from field to field, tree to tree with a bobbing flight, and a merry lisping tune at every feeder. Follow them and learn for what they are hunting. Perhaps you have noticed that the goldfinch is usually the last bird to build its nest, postponing housekeeping until after the Fourth of July, not because he is slow in making up his mind or lazy or afraid the guns and firecrackers will disturb his family, but because Nature is a good provider and does not allow the young birds to be hatched until food is abundant. Can you tell the rest of the story? What is the food and why is it advantageous for the goldfinch to put off nesting for a month to six weeks after the other birds? Can you judge from the shape of the goldfinch's bill the nature of its food? What other birds have similar bills? From the shape of the bill, and the general shape of the body, feet, etc., persons by study of a collection of stuffed birds tell which ones are the relatives of the goldfinch, which are his cousins, his playmates, etc.

While the goldfinch is with us always, there is another bird which visits us only in the winter and is almost the direct opposite of the goldfinch in habits, appearance and disposition. Some day if you have sharp eyes you will make a new bird acquaintance. When you meet him he will be very busy running up or down a tree trunk in a spiral direction searching in a funny nonchalant way for something which he never seems to find. His faint, squeaking "ugh, ugh" gives us the impression that he is continually grumbling to himself in a half-complaining, stream-minded way. If you get near enough and usually he is too busy to mind a careful, polite approach you can see that the cause of his complaint seems to be the scarcity of insects hiding under the bark. It is hard to believe after watching him that he would fail to find the insects if they were there, for he is very thorough and painstaking in his search of the crevices behind the rough bits of bark, probing them with his long slender curved bill or sharply sounding them with one of his black bright eyes. In the woods his weak little song is usually heard before the bird itself is seen. Commonly it is only by special attention that we discover this tiny, long, lean, brown mouse-like bird winding his way up the tree. Or we may

"do not confuse this brown bird with the slate-grey, white or brown breasted creeping birds of similar habits, the nuthatches."

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catch a glimpse of him after he has completed his inspection of one tree from the trunk almost to the tips of the branches and flies down to the trunk of a near by tree to begin his upward climb.

(To be continued.)

COLORADO AS A FRUIT STATE.

"The first carload shipment of green fruit from California was sent to Chicago in 1868. California shipped in 1899 of green fruits 7,000 carloads."—New York Sun.

Except in citrus fruits, such as oranges and lemons, Colorado can equal California in the production of varieties that would command a ready sale in markets beyond the borders of this state. As Colorado has taken from California the distinction of leader in the production of gold, so it may deprive it of the first place in the production of temperate-zone fruits.

It is said that this season's crop of prunes in California will amount to 120,000,000 pounds. They are sold all over the United States and have driven out the foreign product, which came chiefly from Turkey and France. Hundreds of carloads of California prunes are now sold in Europe. California sends out large quantities of dried peaches and apricots, its shipment of dried apricots last year amounted to 1,500 carloads, of which 400 were exported. It also ships enormous quantities of dried and canned vegetables, and its cherries, plums and pears are sold throughout the Union.

In that part of Colorado lying north of Denver many species of hardy fruits can be grown, but it is especially to the Arkansas valley on this side of the mountains and to Montrose, Delta and Mesa counties on the western slope that one must look for the development of the fruit industry in the future. The superiority of Colorado peaches are not to be compared with California, so excellent is the Colorado product. The soil and climate of the Grand valley are well adapted to the production of other species as well.

There is a large acreage in the western part of the state and in the Arkansas valley which has not yet been planted to fruit. It is but a question of time and intelligent effort until Colorado will be in a position to dispute the place of supremacy with California. It is much nearer the eastern markets, and it should be able to more than compete in the sale of nearly every species of fruit produced in California, except those of a semi-tropical character. One may see visions of great wealth for the state in the development of its productive powers in this respect.—Denver Republican.

STRAWBERRY CULTURE—PROTECTION.

By O. W. Blacknall, Kittrell, N. C.

That in cold climates where the thermometer falls much below zero, the strawberry plant needs winter protection is a well established fact. There it is the custom to apply mulching over the plants as soon as the ground freezes hard enough to drive on without much breaking of the crust. The date of application will depend on the latitude and the earliness or lateness with which winter sets in.

An almost endless variety of material can be used for this purpose. Pine leaves, wheat, oats or rye straw, forest leaves, marsh grass and stalks of many kinds. What is desired is to cover the plants just deep enough to greatly lessen, but not entirely prevent, freezing. The harm that freezing or rather alternate freezing and thawing does is chiefly mechanical—the heaving of the soil and the attendant breaking of the roots as the plant is raised upward with the soil. This can be attained by using more or less of the mulching material in proportion as its nature is to lie close or open and as the climate is more or less severe. Thus, a much thicker mulch of corn stalks than of straw will be required to attain the desired results.

The objection to a long light material like the straw of small grain is that it is liable to be blown off. Forest leaves are also objectionable for this reason. This difficulty is partially obviated in the case of straw by cutting up the material short. Probably the most effective prevention of this trouble with both grain and forest leaves is to anchor them down with earth or small stones judiciously placed at intervals.

How far south it pays to use winter mulch is a mooted point. It is doubtful whether as a rule it pays south of the Mason and Dixon line, except in the mountains. Some winters it pays in North Carolina. Often it does not. The objection to winter mulch at the south is that it harbors crickets and other insects harmful to the strawberry plant.

But for one purpose winter mulch is beneficial wherever the ground freezes as deep as two inches. That is to protect plants set in winter on wet, stiff soil. This soil is much given to heaving, and plants set on it in the depth of winter are apt to be lifted out of the ground by the alternate freezing and thawing. A handful of pine leaves thrown over each plant prevents harm. On nearly all soil, or in fact on any except wet, stiff fields or parts of fields this protection of newly set plants is not necessary south of the Mason and Dixon line. We do most of our planting in late November, December, January and February, and get a perfect stand without this protection except on a few wet spots. But at the North it renders practicable planting at a much later time in the fall than would be advisable without it.

The use of straw of various kinds to protect blooms from late spring frosts has now become pretty general. The straw is strewn along the middles in advance and on the plants when frost threatens, and off when the danger passes.

The use of mulch to keep the berries clean is imperative. We apply it about blooming time.

For several years, beginning in 1887, I used cloth largely to protect strawberry blooms from frost. The kind used was a thin muslin, sold at the South for use on tobacco plant beds, where it is found equally valuable as a protection from frost and from a destructive species of fly. I found that the tarred or chemically treated cloth was much the best.

My object in using this was to protect the strawberry blooms from frost and also to promote earliness in the ripening of the fruit. The cloth was put on about a month before the blooming period and not removed till the berries were ready to be picked. Small, low stakes provided with wire hooks were driven in the ground at short intervals. These held the cloth securely against the hardest wind. Being low, they did not hold the cloth high enough from the ground to be torn from its fastenings by snow.

The effect of this mode of protection was fully up to my expectation, both as a safeguard against frost and as a promoter of earlier ripening of the berries. Berries under the cloth ripened about one week earlier than those outside. On April 16, 1890, the ground froze half an inch deep and frost killed every exposed bloom. Not one per cent of those under the cloth was lost. As a consequence we netted nearly $1,800 on about six acres.

The largest yield that I ever made, 11,000 quarts on one acre and a quarter, was under cloth.

Moreover, there was another very unexpected and surprising result from this mode of protection. The berries grew very much larger, giving a corresponding increase in the yield per acre. This last result is in accord with the recent discovery by Mr. A. T. Goldsborough and others that in the protection of mammoth berries the use of the cloth is essential.

Just then came the large increase in the strawberry acreage in the lower regions in Eastern Carolina. While the strawberry does not grow as fine there as here, it ripens from ten to four weeks earlier. Consequently the week gained in the earliness of berries here did not justify us in diverting from our regular business the

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A copy of the American Fruit and Vegetable Journal will be sent for the remainder of this year, to any one sending ten cents and furnishing us the names and addresses of 20 persons, who may probably be interested in either the colony or the paper.

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large amount of time and energy necessary to make berry growing under cloth pay us. Had I to devote my whole energies to rowing five or ten acres of strawberries, should as soon as my soil was made rich enough to grow them to perfection, protect every acre with cloth. The cloth used must of course be very thin.

A COMPARISON OF SOME VARIETIES OF PLUMS.

By W. J. Green.

In the following comparison of varieties reference is frequently made to the groups to which they belong. This is done as a matter of convenience as well as to show, in a general way, what qualities predominate in the different groups. To the practical plum grower it may not matter how plums are classified, and it is not deemed necessary in this paper to take up the subject in detail, but a little explanation will help to a better presentation of the case.

Groups of Plums.

The best known group is the common garden plum, Prunus domestica, often called the European plum, of which no description is necessary. Our native plums are nearly as familiar to most people, although so many new varieties have been originated within a few years, that one can hardly keep an index of them. They are divided into several classes, but it is unnecessary to mention only the most prominent, as all will not be referred to in this connection. Prunus Americana comprises one group, of which it is sufficient to say that the trees are vigorous, with dark leathery foliage, while the fruit has a tough skin and is often astringent at the stone. The Wild Goose group, Prunus hortulana, has a foliage resembling the peach, somewhat and the fruit is usually watery. The Wayland and Miner groups are really subgroups of the above. The Wayland varieties have a bright, shiny foliage, resembling the orange, and the fruit is very firm. The Miner group partakes of the characters of Americana and hortulana. The Chickasaw, or angustifolia group, has foliage somewhat like the peach, and fruit watery, but the twigs are zigzag in outline, and the trees usually very spreading in habit. The nitidus group comprises the Japanese sorts quite distinct in most respects from the varieties of the other groups.

The plan of the following comparison is to bring together varieties having similar qualities, or characteristics, rather than to give detailed descriptions, thus enabling anyone to select for earliness, lateness, quality, etc. This method serves to bring out some of the most striking characteristics of both varieties and groups.

Period of Ripening.

The earliest ripening varieties are Wayland, Red June, Ogon and Kerr, all of which are Japanese sorts. The first named is small and of very poor quality, but the others are fairly good. Red June is by far the best of all. The Wild Goose group is represented by Wild Goose and Milton which mature along with Red June, Ogon and Kerr. Plymouth is the earliest of the domestica group, although there are several others nearly as early and comes in with those above named. Thus it appears that the Japanese group stands at the head as regards earliness, and some others might be added that are almost as early. Late varieties are found in all groups, but the very latest that will ripen in this state are mostly of the Wayland group, and Wayland, Reed, Golden Beauty and Moreman may be named. Some of the best late varieties of the domestica group are Grand Duke, Monarch, Bolton, Claude, Arch Duke, Cox's Golden Drop. Nearly all of the varieties of the Wild Goose and Chickasaw groups are intermediate in time of ripening.

Size of Fruit.

The domestica group easily takes the lead here, although it does not include all of the large varieties. Lincoln, Bradshaw, Prince of Wales, Grand Duke, Yellow Egg, Cox's Golden Drop, Pond's Seedling, Arch Duke and Monarch may be named as some of the largest and best European varieties. When well grown all of those named would be ranked as "fancy" by the trade. Of the Japanese varieties, Burbank, Chabot and Satsuma take nearly equal rank as to size as those in the above list, but most of the others fall a little below. Nearly all of the native sorts fall below what would be called "fancy," although some would rank as large, notably Wild Goose, Milton, Poole's Pride, Hawkeye, Ironclad, Forest Rose and Champion. The majority would be classed as medium, and some as small.

Beauty of Fruit.

The honors are pretty equally divided here, provided we put all the varieties into one class, but if we follow the same plan as before it must be conceded that the Americana group will suffer in comparison, as most varieties of this class are rather dull in color. This is due, in most cases, to abundance of bloom. Some of the choicest in quality are decidedly unattractive in appearance. In the Miner group the case is similar but in the Wild Goose, Wayland and Chickasaw groups are found some of the brightest colored fruits that are known among plums. Reed, Golden Beauty, Wayland, Chapman, Poole's Pride and Newman are good examples. Of the Japanese varieties Burbank, Abundance, Red June and Ogon are among the most attractive. In the domestica group there is a lack of bright colors and yet there are some very beautiful fruits. As in the case of the Americana the bloom sometimes makes the fruit unattractive, particularly with the yellow varieties, but in many other cases it adds greatly to the beauty of the fruit provided it is left undisturbed. Lincoln, Bradshaw, Pottsdeberg, Pond's Seedling, Grand Duke, Yellow Egg, Arch Duke, are all attractive in appearance and the list might be extended.

Quality of Fruit.

In delicacy of flavor the Americana group easily stands at the head. It is true that the skin and some of some of the varieties of this class have more or less astringency, but for eating raw this does not come out as in cooking. Not all have this objection, however. Among Eagle, Champion, Hawkeye, Ironclad, Purple Yosemite, Wolf and Yellow Sweet are all good and many others are quite desirable. Of the Miner group the best are Miner and Purple Flower, the latter being particularly choice in quality. There are but few really good varieties so far as quality is concerned in the Wild Goose, Wayland and Chickasaw groups. Golden Beauty, Reed, Wayland and some others of the Wayland group are fairly good when fully ripe, and the same is true of Milton, Poole's Pride and a number of others of the Wild Goose group. The Japanese varieties stand but little if any, higher. Abundance is really good and some would place Burbank and Chabot as nearly as equal but they are hardly entitled to rank as best. There are many choice varieties among the domestica so far as mere sweetness is concerned, but delicacy of flavor is rather rare. They are more meaty than those of most other classes, which combined with sweetness, seems to give them richness, but the majority are evidently lacking in the rare quality of some of the Americana. Imperial Gage, Green Gage, Missouri Green Gage, Reine Claude de Bavay, Pottsdeberg, Jefferson, McLaughlin, Cox's Golden Drop and Spaulding are all of excellent quality, and because of sweetness and richness they are commonly ranked very high, nor is there any reason to rate them differently.

Prolificacy and Precocity of Trees.

Nearly all of the native and Japanese varieties bear young and abundantly, in fact, are too prolific and precocious for their own good. The Burbank is a marvel in this particular and it may almost be said that there is nothing else equal to it, but some of the Wild Goose group are not far behind. One may expect considerable crops from many of these varieties in two to three years from planting. Quite the reverse is true of most of the domestica. Even the Lombard is behind those named in point of size and quality. Most varieties of this class require from four to six years to reach bearing age.

Susceptibility to Attack of Diseases and Insects.

Here again we are able to make some general distinctions between groups.

*Read before the Columbus, Ohio, Horticultural Society.

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American Fruit And Vegetable Journal.

713 MASONIC TEMPLE, CHICAGO.

The majority of the domesticas and Japanese sorts are very subject to fruit rot, while most of the natives are nearly exempt. Of the Japanese kinds Burbank, Satsuma and Abundance are particularly bad; so much so that it requires considerable skill to get any fruit at all from the first and second in unfavorable seasons. Of the domesticas Lombard, Gueii, Yellow Egg and Pond's Seedling are nearly as bad. It may be said of these two groups that to rot is the rule, and the exceptions are rare. On the other hand, the native sorts are often afflicted by the disease known as plum pockets and are subject to a twig blight not found upon the domesticas. Black knot is almost unknown among the native varieties, as well as the Japanese, but is very common with the European kinds. The shot hole fungus is found mostly upon the domestica varieties, where it often does much harm. The curculio attacks the varieties of all classes, but does most harm upon those of the domestica group.

Hardiness.

Unquestionably the Americana is the hardiest group of all, but there need be no fear in this respect regarding any of the native sort. The Japanese sorts will not endure our severest winters, nor will very many of the European varieties. Moore's Arctic is decidedly hardier than most others, and the Yellow Egg is regarded as comparatively hardy. The Japanese sorts bloom very early and are often killed by frost in the spring, hence are not safe in many localities.

As a sort of summary of the above it will not be out of place to name certain varieties that are adapted to peculiar purposes.

Good Market Plums.

The following is a good market list, keeping in mind, however, the fact that varieties vary more or less according to soil and treatment, and that markets are not alike as to requirements:

Bradshaw, Lombard, Lincoln, Prince of Wales, Gueii, Reine Claude de Bavay, Grand Duke, Fellenberg, Yellow Egg, Abundance, Burbank, Chabot, Red June, Wild Goose, Poole's Pride, Prairie Flower.

The list is, of course, too long, but one need not go much outside of it to get the best for this state (Ohio).

Plums for Home Use.

For home use, the following are among the choicest: Reine Claude de Bavay, Fellenberg, Imperial Gage, Yellow Egg, Abundance, Red June, Prairie Flower, Richland, Reed, Hawkeye, American Eagle, Champion.

Yellow Egg, Prairie Flower, Fellenberg and Richland are particularly recommended for canning, and the Reed for jelly, as for this purpose it is unsurpassed.

Summary.

As a final summing up it may be said that the domestica group has more good market varieties than most others, except for localities where it does not succeed. The Japanese group is pressing hard for a place and some of the varieties are likely to become good market sorts in many localities. Our native classes are full of good kinds, but for this latitude not many of them have just the qualities of market varieties, although some are destined to fill important places. It would not be wise to plant them exclusively, nor even largely, but they ought to have a representation. This class has a special place; plant a tree or two of a kind for home use, particularly for eating raw.

In selecting varieties of plums one ought, especially for home use, choose for particular qualities, and the list is so large that this is easily and satisfactorily done. The market one must select according to the demand as well as to have in view which varieties are likely to succeed.

Plum culture is advancing rapidly and new varieties are coming forward in quick succession, and much that is said today will need revision tomorrow, hence I do not stand committed for any length of time to any statements herein made.

HOW TO PLANT A FRUIT TREE.

If fruit trees have become dried or shriveled before planting, they should be immersed in water for a few hours or buried all over in moist earth for a day or two, to restore the moisture in the wood.

Moisture is absolutely essential and the most important part of the conditions of transplanting. To lessen the requirements of the tree, we always shorten in the tops very much, leaving only one-third or less of each branch.

Our next consideration is to put the roots into the best possible condition to absorb moisture. This we do by cutting off the bruised ends of all roots of any size, as the fresh-cut ends will much more readily absorb moisture than the bruised, broken and dead root ends can, as they are left in the process of digging and handling. It is not the aggregate amount of root on the tree that is the most valuable in planting, but rather the greatest quantity of ends of roots. It is at the ends of the roots where nearly all the new growth takes place and where rootlets must be formed to nourish the tree.

Every tree should have its roots well puddled in thin mud just before being put into the hole. In ordinary clay or common soil, make a small hole a foot deep, into which pour a pailful or two of water and mix with some fine earth until about the consistency of thick cream. After the tree is put in, the earth should be tramped in hard around the roots, and loose earth be left to cover the surface.

A very common cause of failure after planting is to leave the trees in growing grain and give no culture. Fruit trees should always be cultivated several times after planting until July, when some cover crop can be grown on the ground, or a good mulch be given in Autumn, as a protection to the roots during the winter.

To protect the trunks from hot winds and sun, wrap the trees about with rye straw; set it on end around the trunks and tie in several places with common wool twine.—A. L. Balch at Nurserymen's Convention.

TESTS OF SMALL FRUITS.*

La Fayette, Ind. Bulletin 83.

By James Troop.

Indiana Agricultural Experiment Station.

The following are the results of our tests of varieties of small fruits during the present season. The list includes many varieties which have been reported before, but it also includes varieties which have either been sent by the originators to the Station for testing or which have been secured from the introducers. Some of them have had several years' trial, while others have fruited but a single season. Although the season as a whole was quite favorable for the berry crop, the strawberry plants on the Station grounds gave the poorest results for many years. Raspberries gave a good crop, but blackberries for some reason fell far below the average for a series of years. It is a noticeable fact that, while there are many new varieties of strawberries put upon the market every year, very few of them find a place alongside of Bubach, Haverland, Warfield, Clyde, Greenville, Gandy and a few others in the commercial growers' field. Many of them are adapted to certain soils and locations only, and can not be recommended for general culture. It is also well known to commercial growers, that certain varieties may do well one season and be almost a failure the next; so that a single season's trial is not to be relied upon except as an indication of what they may do under favorable or unfavorable conditions, as the case may be. Hence the necessity for repeated trials.

*From Bulletin No. 83.

Strawberries.

Our list of strawberries comprises eighty-two varieties. A few of the newer ones are mentioned in detail, while the entire list of those which have fruited, is given in the following table. Below is a record of the varieties as made up at the time of fruiting:—

Beauty, P.* This was originated by Mr. Christian, of Ohio, and it continues to maintain its reputation for beauty and productiveness, while its quality is very good. It ought to find favor with the commercial grower.

Beverly, B. This is one of the earliest to ripen; plant vigorous and productive, fruit large and of good quality. A very good berry for general planting.

Bismarck, B. This has fruited but a single season on our grounds, but promises well. It somewhat resembles Bubach, but is of better quality, and being self fertile, it promises to share honors with that old and well tried variety.

Bush Cluster, B. This is of late origin and is so named because of its habit of bearing its fruit high up on long fruit stems. It somewhat resembles Parker Earle in that respect. It ripens early and promises well.

Clyde, B. This is certainly one of the most prolific varieties grown, and deserves a place in the list of market varieties. Its color is rather too light for a fancy market berry, but its uniform size and productiveness make it a valuable berry for the general grower.

Dole, B. The plants were obtained from Slaymaker & Son, of Delaware, and have fruited but a single season. The fruit is large and very symmetrical and the plants strong and very vigorous. It promises well.

Dunlap, B. This variety originated in Illinois, and was named for Hon. H. M. Dunlap, President of the Illinois Horticultural Society. While it has fruited but a single season here, it promises to bear out, in a great measure at least, the many recommendations given it by growers in Illinois. The plant is very strong and vigorous, productive and free, thus far, from disease of any kind. The fruit is not only large, but even in size and presents a beautiful appearance.

Kienmore, P. This is a vigorous growing plant, holding its fruit well up on strong stems; fruit large, firm and of good quality. Medium time of ripening.

Hilson, B. Originated in New York. The plant is strong and vigorous; fruit large, uniform in shape and very firm, making it a good shipping berry. Judging from a single season's trial it will prove a good variety for the commercial grower.

Gladstone, B. This is a Pennsylvania variety, and as grown in the east, it is said to be a wonderful berry. It has shown during the past season wonderful vigor of plant, and will be in

*P indicates that the variety is pistillate or self sterile.

B indicates that it is bi-sexual or self fertile.

condition another year to show what it can do in the war of fruiting.

Glen Mary, B. Originated in Pennsylvania, and has become quite well known as a vigorous and productive variety, fruit very large, but under high culture, inclined to be mushy.

Jerry Rusk, B. Although this has fruited for several years it does not seem to have attracted that attention that it deserves. On our grounds it stands next to Clyde in point of productiveness; the berry is darker in color, making it more attractive as a market berry, and the quality is a little better than Clyde.

Johnson's Early, B. This is a good improvement over Michel's Early, as grown here. The fruit is large and of good color and quality. Grown but a single season, but it promises well.

Klondike, B. This is a new variety from Massachusetts and seems to possess some good qualities. We have grown it but a single season, but it has proved to be a good grower, ripening its fruit ten days to two weeks later than Johnson's Early.

Marguerite, B. This variety originated in northern Indiana, and is said to be a seedling of Jewell, fertilized by Jessie. It is a vigorous grower, and the past two seasons has produced heavy crops of large dark berries, which ought to bring the highest price in any market.

Maximus, B. J. H. Hale, of Connecticut, says this is the "greatest of all strawberries." The plants were received from him last spring, and while it is too early by double to be able to ascertain what it will do here, it has started off in good shape and promises to be worthy of its name.

Mammoth, B. One season's trial gives us a good opinion of this variety. The fruit is very large, dark red, and quite regular in shape. It will require another season to show what it can do.

McKinley, B. This variety is recommended very highly by Mr. Crawford, of Ohio, and judging from a single season's trial, on our rather heavy sandy loam it will prove to be a valuable berry for Indiana. The plant is healthy and a vigorous grower, and the berry of good form and color, firm enough for a shipping berry.

Morgan's Favorite, B. This is another large, fine berry, and gives promise of being as productive and strong growing as Pubach. It will require another season to test its profitableness on our soil.

Parker, Early, Improved, B. This is a seedling of Parker Earl, and resembles the parent, except it throws out runners more freely and ripens up its later berries larger. It does not seem to be so partial to a rich moist soil as does its parent.

Pride of Cumberland, B. The fruit somewhat resembles the old Cumberland in form, but it is more firm, thereby making it a good shipping berry. Its season is medium, and needs a good rich soil in order to do its best.

Pumack, B. This originated in Connecticut as a dinner seedling. We have grown it but a single season, but it promises to be a valuable acquisition.

Ruby, B. This is a free plant maker, and the fruit large, regular and of good color, and firm enough for a shipping berry. It promises well.

Superb, B. This is one of the best of the seedlings, sent us by S. B. Christian, of Ohio. It has fruited on our grounds four seasons, under varying conditions, and has held its place among the best.

GRAPE BASKETS.

We have 15,000 to 20,000 10 lb. grape baskets on hand, all in good condition, that we will sell at a bargain, in lots to suit.

C. H. DEBORN & SON,
Milton, Ill.

Now comes the cry from our new and prosperous Oklahoma that the dear little English sparrow, that is as sure a singer as the foreign hare and about as valuable, has been eating their grapes. The sparrow is said to split the berry, suck out part of the pulp, go on and do the same another, the same way so that the juicy injured fruit invites wasps and other insects. Thus the crop of fruit is damaged.

The Republican National Campaign Committee have chosen the pink carnation as a badge of the party during the present campaign. This is owing to the fact that the pink carnation is President McKinley's favorite flower.

LESSONS FROM THE WINTER OF 1899-'900.

Prof. E. S. Goff, Madison, Wisconsin.

(Paper read at Ill. State Horticultural Society.)

The situation is already too well known. Hundreds of acres of nurseries and young orchards destroyed or seriously crippled, the damage being done almost wholly in the root, a peculiar condition. The temperature was remarkably low, but the damage to the tops of trees and to flower buds was not greater than it has often been with less extreme cold.

How shall we benefit by experience? In two ways. We should make a careful study of the facts and learn what we can from them, and second, we should begin a system of observation and experiment for the future. Our experiment stations should take the lead in this work, but they should not be expected to do it all. We need the thinking, the observation and the experience of intelligent amateurs and fruit growers all over the northwest.

The Cause of the Damage.

Various speculations have been indulged in to explain the unprecedented damage to roots. Many have offered the alleged unusual dryness of of the soil as the prime reason, while a leading pomologist of Iowa has put forth arguments to prove that it was due to excessive rainfall at the time the ground froze in autumn. Those who have read our bulletin, No. 77, will find it difficult to resist the conclusion that the immediate cause was extreme freezing with bare ground. The excellent condition in which the tops of our trees came through the winter does not indicate an abnormal condition of the soil. However important it may be to learn the cause, it is more important still to find out the conditions that escaped the destruction.

The Lessons Taught.

Perhaps the most important lesson taught by the disaster of the past winter was the great value of the snow covering. The place where we will do well to modify our practice most is in the direction of saving this protection.

Methods of Retaining Snow.

First of all, I suggest always plant nurseries, blackberry plantations and vineyards with reference to retaining snow in winter. Whenever two localities have equal advantages in other respects, choose the one that is most likely to hold the snow, and then treat it in the way that helps most to accomplishing this end. North slopes, rough ground, elevated ground, wind breaks, frequent rows of current bushes on the hardest red raspberries, extending rows east and west are some of the means that suggest themselves. Others will doubtless appear when we begin to study the subject. It may seem to some that it were useless to attempt to control an influence so fickle and transient as the snow, but when we recall the fact that an inch or two of snow sufficed to save many valuable trees this winter, we could not dispute. My own vineyard was located on a hilltop, and the ground was quite very rough in the labor of covering for winter. There was very little snow throughout the county in which my vineyard is located, but the depressions in the rough surface were filled during the cold snap. The result was that I harvested 2,200 pounds of choice grapes from two acres of vineyard, and the vines are in excellent condition for next year.

Mulching and Cover Crops.

The results seem to show that a mulch that had been on the land during all of the previous season did little good in protecting the roots. In our station plum orchard, which had been well mulched with marsh hay for two months previous to the freeze, many trees were killed and some even of the Abundance varieties. Some have reported good results from mulching in the fall of 1899, but not all. On the whole, the effects of mulching seem to have been less satisfactory than snow.

Several have reported nurseries that have been neglected and allowed to grow up in grass that escaped harm, while well cultivated ones in the near vicinity were destroyed. This is not an argument for growing nurseries in sod, but it suggests the importance of a cover crop. Oats sown in the nursery about August 1, will make a good covering for the ground by the time of hard frost.

The question of hardy stocks. The fact that the roots of our trees utterly failed in hundreds of instances, while the tops were uninjured, naturally raises the question if hardier stocks may not be found for our fruit trees. So long as we must graft or bud these anyway, why not put them on a stock that is able to resist the conditions another time. We have certainly given too little attention to this subject in the apple. It is true that the hardier apples when well rooted from the chokeroots, but they have not proved hardy enough. Professor Hansen's recent bulletin on this subject is most timely and should be read by every fruit grower in the northwest. For the benefit of those who have not read it I will state that Professor Hansen recommends the crab Pyrus baccata as a stock for the apple, and he bases his argument partly on his limited experience with it at Brookings, South Dakota, but more on the fact that it has been found to answer the purpose well in parts of Russia where all but the very hardiest apple stocks, root kill bright.

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nally. We have this species growing at Madison, and shall propagate it as fast as we can. I have also procured a quantity of seed of the Soulard crab, and shall endeavor to try this also. For the plum, it is doubtful if we can find anything more satisfactory than seedlings of Prunus Americana. For the cherry, the Mahaleb stock seems to have stood the test better than the Mazzard, but we should try to find something hardier than either.

Potatoes weigh much more when first dug.

* * *

Pajaro Valley, Cal., is consulting on 1,000 to 1,500 carloads of good shipping apples.

* * *

$1.75 to $2.25 per barrel is thought to be the range of prices on the eastern apple crop.

* * *

The Southern Nurserymen's Association have reelected N. W. Hubs, of Knoxville, Tenn., as president and Lee Wilson, of Winchester, Tenn., as secretary and treasurer.

* * *

The Mexican orange crop promises to be good. Already shipments are beginning to arrive, but are selling slowly. About October large consignments are expected.

* * *

The United States Department of Agriculture estimates that the damage by insects to the fruit, grain and vegetable products annually will reach about $200,000,000.

* * *

Idaho reports large shipments of fruit. The prune crop is said to be very good.

California's exhibit of fancy nuts at the Paris Exposition is pronounced very large and fine. The display of walnuts and almonds is said to surpass any other exhibit of nuts.

American Fruit and Vegetable Journal trial subscription for one year, with the **Inland Poultry Journal** as a premium, both on receipt of 25 cents. Address the American Fruit and Vegetable Journal, 713 Masonic Temple, Chicago.

California consigns the past season's crop of oranges to have been 11,[illegible] carloads, valued at $3,[illegible].

LOW RATE ADVERTISING.

(A suitable matter under any of the following heads will be taken for 1 cent a word each insertion.)

[illegible] ACRES of land, near Southern R. R., good for peaches, pears, grapes, and vegetables; in the same county as Foliable, Alabama; good health and water, for $1,200. Fine range for cattle and sheep. Apply to L. W. McRAE, Calvert, Ala.

FOR SALE OR EXCHANGE—Six 10 acre garden, fruit or farm tracts, 4 or 5 miles from Floraborne and 10 miles northwest of Palatka, Putnam Co., Fla., where there are four railroads and the St. John's river. Can be sold in either 5 10, 20 40 or 80 acre tract. Would accept house and lot in suburban town. Address N., care American Fruit and Vegetable Journal, Chicago.

FOR SALE: Choice farm of 100 acres in Wayne county, the great fruit section of Illinois, 100 miles east of St. Louis; 120 acres under fence and in cultivation; 10 acres in woodland. Good, well painted frame house, large barn, good family orchard. Church and school adjoins the farm. Three and one-half miles from two railroad towns. Nice location and good land for either orchard or general farming. Price $50 per acre. Easy payments. Also 140-acre farm, well located, in Wayne county, Illinois, with house, barn, etc., and well fenced; nearly all in meadow. Good for either farming or fruit growing. Railroad town three miles, church and school one mile. Price $40 per acre, one fourth cash and remainder in payments. Also 4[illegible] acres of good unimproved timber land, adapted to either fruit, truck or when growing up cleared in Missouri 100 miles southwest of St. Louis. Healthful location with excellent water. Price $[illegible] per acre. Address J. R., care American Fruit & Vegetable Journal.

FOR SALE OR EXCHANGE LARGE APPLE ORCHARD NEAR EL DORADO

In sunny Southern Kansas. On good roads, healthful climate, abundance of good water, numerous railroads, convenient markets, good schools and church.

This orchard consists of about 4[illegible] best standard trees, nearly all either apples.

It is located on 10 acres of level, black soil, medium clay subsoil, underlaid with a clay subsoil, and that resting on a limestone structure, thus making a superior location, well drained and sightly. Abundance of the best water can be found from ten to sixty feet.

The orchard is thirty two miles east of the city of Wichita, on an excellent public road, and only a few rods from the Atchison, Topeka & Santa Fe R. R. switch.

With the exception of a few trees, the orchard is nearly all 12 to 14 years of age. The whole orchard is in a very healthful and vigorous condition.

The varieties are well assorted and of very best commercial kinds. The house is a nice [illegible] story frame cottage. Title is good and [illegible] excellent.

The city of El Dorado, located on the banks of the beautiful Walnut river, is five miles south, has 3 railroads, a population of 2,[illegible] and is the capital of Butler, the largest county of Kansas.

The owner has other business.

Address J., care American Fruit and Vegetable Journal, 713 Masonic Temple, Chicago.

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Vol. 2, No. 11.

NOVEMBER, 1900.

AMERICAN FRUIT AND VEGETABLE JOURNAL

713 MASONIC TEMPLE, CHICAGO, ILL.

VIEW AT FAIR OAKS, CALIF.

PEANUTS AND PEAS.

By H. B. Hilyer.

Paper read at the meeting of the Truck Growers' Association, on Oct. 9, at Dallas, Texas.

"The culture of peanuts is not intended for large crops like corn and cotton, but rather for a truck patch, as potatoes or peas, a few acres on each farm. The peanuts are so troublesome and tedious to gather for seed purposes that such harvesting can only be profitably done by the small force on the farm or to occupy rainy days.

But when harvested as a whole, vines, peas and all, and cured, stored and fed like oats, I consider them the best and most profitable feed crop grown. They fatten horses, hogs or cows faster than any other crop I have ever tried. They form a complete ration. All stock are fond of them and will eat them up clean, roots and all.

They are as easy to grow as corn, stand the drouth as well as sorghum, will make fair crops on land too poor to grow corn at a profit, and will improve the soil each year. There are several varieties of the peanut. The old sort known as the Virginia peanut have from two to three peas to the pod. These grow to a large size and are chiefly used in this country as parched goobers on the street stands, but in Europe are largely grown for the factories. The oil is pressed out and is said to be superior to olive oil, while the cake is fed to stock as cotton seed meal is in this country.

The large peanuts are a running variety. At each joint they throw out and send down into the soil small roots which develop into the pea. If these roots from any cause fail to penetrate the soil they perish, and hence can only be grown on very light loose sandy soil. They stand the drouth poorly, and shatter off badly in cultivation, indeed a large part of the crop is sure to be lost unless you have pigs to glean them out.

The Spanish peanuts are by all odds my choice. They are upright growers and can be planted closer together, yielding twice as much per acre as the other varieties. They send down deep tap roots like cotton, and hence stand the drouth splendidly. They are as easy to cultivate as corn, three plowings and two hoeings being ample. The peas grow in clusters about the tap root, to which they adhere firmly, and in gathering you pull up the vines and lay them out to cure with the loss of very few peas. The pods are small, rarely containing more than two peas. These are far richer and sweeter than the other varieties. When cured, which is in a few days, they can be stored in barns or rail pens and kept indefinitely. They are easily handled in feeding. They are as easy to grow, cultivate, gather, cure and feed as corn, and will grow on any soil, and on the same land will produce two or three times the feedstuffs per acre as either corn or oats. They will make on soil too poor for the other feed crops and stand drouth better than any of them.

I have planted Spanish peanuts for years, and have six acres of them this year. They will produce from fifty to 100 bushels per acre and make from two to four tons of the finest hay I ever saw. To gather them for seed is slow and tedious. No machine has yet been invented to do this work, and any man will think them cheap at almost any price who will pick them off the vines by hand and clean them for market, yet I do it every year, and thus utilize the small hands of the farm and put all hands to work on rainy days.

There improvement of the land is an important factor in estimating the profits of the crop. Any crop that follows the peanut will give an increased yield of at least 25 per cent. The same is true of all kinds of peas."

MEETINGS OF STATE HORTICULTURAL SOCIETIES.

Missouri—Farmington, Dec. 4-6.
Minnesota—Minneapolis, Dec. 4-7.
Michigan—Grand Rapids, Dec. 4-6.
Illinois—Champaign, Dec. 11-13.
Maryland—Baltimore, Dec. 20-21.
Indiana—Indianapolis, Dec. 18-20.
Maine—Norway, Nov. 13-14.
Kansas—Topeka, Dec. 27-29.

Both California and Florida promise a large orange crop. The crop in Florida, it is said, will be the largest since the great freeze, while the price will be so much better that it will bring nearly as much money.

If plum trees of any of the rapidly growing Chickasaw varieties are grown from the seed, they may be induced to put forth fruit buds by root pruning and cutting back the new growth about one-half.

The Farmers' Review says the Ben Davis and Gano are one and the same apple. Some most excellent fruit growers will not agree with him. Last fall, while in the Ozarks, the editor of this paper saw both Gano and Ben Davis in the same land and some times the same barrel, and it did not require an expert to distinguish the difference.

American Fruit and Vegetable Journal trial subscription for one year, with the **Inland Poultry Journal** as a premium, both on receipt of 25 cents. Address the American Fruit and Vegetable Journal, 713 Masonic Temple, Chicago.

PECANS PAY PROFIT

BROTHER FARMERS: Don't you see the great interest in Pecan culture? For years we have made it a specialty. Our Ne Plus Ultra are the finest known, four times the size of ordinary commercial; very thin shell; finest quality; go about thirty to pound. They are adapted to any soil and climate that will grow a hickory or black walnut, bear to pay in five or six years, can be set on same land with cultivated crops and will not interfere for years, or can be set on prairie or other open or pasture land; cattle does not bother them. They will bear at least 25 lbs. to tree in five years, and ten times that amount in ten years; they bring at least $1 per lb. (these fancy kind) for seed, and five times as much on general market as the ordinary wild commercial. We offer $100 for sample of better than ours.

We will furnish 27 1-year-old trees to set acre 40x30 feet for only $4.50 and prepay them by express to you; 100 or more trees 12 cts. each, delivered. These are far lower than any others sell them.

We also have the finest field corn known, highly improved by us 30 years, pure white, kernel nearly inch long, very flinty (weighs 60 lbs. to measured bushel), shells over 1 lb. to ear, matures in 100 days, and guaranteed to make one-fourth more per acre on same ground and with same cultivation than any other corn known.

Price Farmers' Pride Corn, 25 cts. one-half lb., postpaid; 4 lbs. $1, postpaid; $3 bu. by express or freight, not prepaid. Descriptive circulars of all free. If you want samples of corn send 10 cts.; if samples of pecan nuts send 25 cts., which will be deducted from order.

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ADDRESS ALL COMMUNICATIONS, and make all checks and drafts payable to the American Fruit and Vegetable Journal.

ILLUSTRATIONS. We will gladly receive photographs, cuts or drawings, suitable for reproduction in this paper, but cannot be responsible for loss or injury.

Ask questions, send us notes, give us your experience. Mark any newspaper paragraphs you wish to be observed.

ADVERTISING RATES will be given upon application.

Editorial.

Where, oh, where is the big apple crop? Echo answers where?

* * *

New Jersey reports her apple crop ruined by heat in the southern part of the state.

* * *

The apple crop in many parts of Missouri, Arkansas and Illinois is reported ruined by bitter rot and fire mark.

* * *

California apple growers have been shipping some very choice fruit to this and other eastern markets. The fruit shipped has been chiefly Bellflower and Red Germain.

* * *

Southeast Missouri is becoming famous as a good section for growing watermelons. Hundreds of cars of choice melons were put on the market this year from that region.

* * *

Blueberries, raspberries, cranberries and currants are now grown in Alaska, yet not so many but what they sell for $1 to $1.50 per quart. Perhaps gold is more plentiful there than berries.

* * *

The estimated apple crop of 8,000,000 barrels has shrunken so much that we have not heard the end of the story. We think all estimates had better be withheld until after the crop is marketed.

* * *

As much as $8 per ton has been paid this year for the pits of apricots. The kernels are ground up and the oil pressed out, from which is obtained almond oil, prussic acid and, it is said, a good quality of baking powder. The candy manufacturers make excellent almond (?) candy from the kernels.

* * *

The cool weather of August was just what our California fruit growers desired for the best growth of their citrus fruits. In some parts of the state it was not so good for drying, but later a strong wind continued to some time, which reversed things, making it better for drying, but not so good for fruit growing.

* * *

The Trade Bulletin, Montreal, says: "There have been considerable purchases of winter apples in Ontario, sales of over 170,000 barrels being reported to us at prices ranging from 60c to 75c per barrel for the fruit. A Montreal firm has secured between 30,000 and 40,000 barrels of winter varieties at 40c to 50c for the fruit which will be packed and culled by his own expert packers. We also hear that sales have been made at $1.10 to $1.25 per barrel for winter assortments delivered on cars."

* * *

Seventy-five percent of the fruit used in Great Britain is imported from the United States and her own Canadian possessions. This foots up an average total of 7,000,000 bushels of fresh fruit, besides the canned and dried product. German fruit growers are working hard to supply the English market with their surplus product.

* * *

A writer says: "To get good apples without grafting, plant the round seed, which is always found in a perfectly ripe apple. Sometimes two will be found, but rarely. The flat seeds will produce a natural fruit or crabapple tree, the round one fruit like the apple from which it was taken."

We think there is about as much in the above as "planting in the moon" or when the sign is right.

* * *

An extensive New York apple dealer says that he does not consider that over 35 to 40 percent of the entire crop in sight on August 1 will now be of marketable quality, such as can be called fair to good or No. 1 stock.

The causes for this great shrinkage are the great storm of September that swept from the Gulf north and then east and to the Atlantic, the long drouth, and last, the long, warm fall.

ROOM IN THE COUNTRY.

A profession or business can probably not be mentioned but what is crowded and overdone. The severe, the heartless, the greedy spirit of mankind in modern business methods tries every element in one's nature to the utmost.

Every springtime colleges and universities in all parts of this country and Europe send forth thousands of graduates, a vast over-supply, to enter some of the regular professions.

In all our public and private schools, in all our colleges and universities we have been educating for professional and city business life. Is it any wonder, then, that there has been for the past twenty-five years, such a wonderful growth of towns and cities? Is it any wonder that in many of the old settled farming regions of the Eastern States, that there are farms wanting tenants and that are valued at less price than twenty years ago?

With the thought and belief of charity and philanthropy, millions of dollars have been given to colleges, libraries and universities. But does money spent in such lavish sums help the poor and needy? Does it even aid them to earn bread and butter? We would not advocate less education nor less reading, but a different method.

If our educational methods only taught the student how to earn a living, if thousands were only taught the mobility of agricultural, horticultural and mechanical pursuits, it would not be long before the rush would be to the country.

VIEWS OF EXPRESIDENT CLEVELAND.

In one of his messages to Congress, ex-President Cleveland called attention to the fact shown by the United States census of the wonderful growth of American towns and cities, while many country districts had lost population. The census of that will doubtless show this same deplorable condition.

EDUCATING FOR THE PROFESSIONS.

It matters not in what school, college, or university the student takes his course, with the exception of a very few agricultural, horticultural and mechanical schools he is taught scarcely anything else than for some profession or city business.

Is it not a fact that nearly 75 per cent of the students attending college come from the rural districts? Visit these colleges and learn how many of their students ever intend or do return to farm life. Latin, Greek, German, French, the elements of all the sciences, mathematics, music, art, etc., etc., are studied as if the student intended to make a specialty of each one of these subjects. In the class rooms on the campus, in the library societies, all he hears, sees and thinks, is of a life and business foreign to the soil, the trees, the work shop, the old farm with all its quiet home surroundings. No wonder that when the young graduate returns home he would rather do anything else than farm, grow fruit or raise stock. No wonder the old home is too quiet, and that country life is dull. A clerkship in city or town, with a room in a garret, meager salary for the rest of his life, or an agency of some kind is more attractive than the farm. If he enters a profession he would rather toil and struggle for a mere existence than enter an agricultural pursuit.

SPOILING GOOD STUDENTS.

How many good farmers, fruit growers, florists and mechanics have thus been spoiled by training them for a life for which they were not suited and that was already filled and overcrowded. How many young men and women have gone home from college with false ideas dissatisfied with country life and longing to enter some profession and be in the city?

If scientific and business methods of farming, stock raising, flower and fruit growing, as well as many mechanical forms of labor had been taught, studied, and lectured upon, if the great openings in these fields, if the opportunities and the pleasures of country life had only been slightly presented, we would not today have so many starving professional and clerical people.

From the homeless slaves toiling in our great cities, existing only from year to year on their daily labor, by the same effort a farm would have been earned, improved and paid for, a delightful home made, and a good living from the best products of the land secured.

GREAT GIFTS TO COLLEGES AND LIBRARIES.

If the munificent gifts made by men of wealth had only been to aid the homeless in securing homes how much greater the good. It is not a university education or a wonderful library that the poor and homeless man needs. It is a chance to earn his living. Give him a piece of land, seed and implements, and with health, labor, and rightly directed efforts, divine providence will bless him with peace and plenty.

How many poor families or even those of moderate means do the millions given by

Stanford, Carnegie, Rockefeller and scores of others really benefit? How many families of even moderate means can even afford to patronize the average university? And when the course is taken in most any of these American or European schools, for what else than a professional life does it fit one?

THE RICH MAN'S OPPORTUNITY.

The Salvation Army has started three colonies, one in California, one in Colorado, another in Ohio. To these they have taken people from the cities thus aiding them in obtaining a home and in better their condition.

Mr. William Curtis, correspondent of the Chicago Record, thus describes the Colorado colony:

"There is no neater group of houses in Colorado, and no more contented community in the world. Nearly every one has written to friends urging them to join the next colony that comes out; and those I talked with were enthusiastic over their success and the pleasures they enjoy. It was difficult for some of them to find words to express their emotion." Yet nearly all these people came from the city, with little or no experience in farm life.

We trust that a brighter day is dawning, when not only men of wealth will aid in opening up farms, and give the poor man an opportunity to earn his living, but also when our whole educational system will give more instruction in agricultural and horticultural subjects and less for the professions. When labor in these lines will be looked upon as just as honorable and dignified as any other.

ILLINOIS HORTICULTURAL MEETINGS.

For four successive weeks Illinois horticulturists and others interested will have an opportunity to attend the meetings of the principal horticultural societies of the state. The meeting of the Central Horticultural Society at Canton, Nov. 20-21, is the first on the list, and the number of distinguished horticulturists and scientists in that district insures a good meeting. Prof. J. C. Blair, Urbana, is the secretary.

Nov. 27-28 is the time of the Southern Illinois Horticultural meeting at Kinmundy. The great fruit interests of this section are a guarantee of a large and successful meeting. E. G. Mendenhall, secretary, Kinmundy, Ill.

The thirty-fourth annual meeting of the Horticultural Society of Northern Illinois will be held at Yorkville, Dec. 4, 5, 1900. The Northern Society always has a good meeting. The secretary is A. W. Bryant, Princeton.

The grand "round-up" will be at the meeting of the Illinois State Horticultural Society in the new Agricultural Building of the University of Illinois, at Champaign, Dec. 11, 12 and 13, 1900. This meeting is expected to excel in attendance and interest any of the recent meetings of the society. It will be a fine opportunity for those having friends at the university to visit them and to inspect the university. The program is full and varied and contains the names of many able men, specialists in their respective lines. Among the topics to be treated are "Bitter Rot," "Spraying," "Pruning," and "Cultivation of Orchards," "Window Gardening," "Forestry," "Winter Vegetables," "Packing and Marketing Fruit," "Development of the Apple Blossom," "Cross Fertilization," etc. Liberal premiums are offered, and a large display is expected, including exhibits from the society's experiment stations.

A new feature is the exhibit of horticultural tools, appliances and spraying machinery, which it is expected will include the latest improvements in this line.

The ladies are specially invited to attend this meeting, and will find many objects of interest.

Send to L. P. Bryant, secretary, Princeton, Ill., for program, premium list, etc., which will be issued soon.

All of the meetings mentioned above are free to all, whether members or not, but $1 sent to the secretary of any of these societies will secure an annual membership in that society, and a copy of the annual report, containing the proceedings of all the societies, or $5 will get a life membership and a number of back volumes of reports.

Courtesy of Santa Fe.

PICKING GRAPES IN ARIZONA.

A vineyard in the Salt River Valley, Arizona, is already producing grapes, oranges, strawberries, and many other fruits, of excellent quality. Some consider that there are parts of this great territory which will produce many varieties of fruit equal to Southern California.

A SCHOOL OF HORTICULTURE.

The new school of horticulture established recently at Briarcliff Manor, not far from New York, to which we have previously referred in this journal, began its work Oct. 1. Both men and women are admitted, and the enrollment gives promise already of a good attendance. Sixty acres will be exclusively used by the school, while a four thousand acre farm, belonging to Mr. Walter W. Law, is placed at the service of the school should it be needed. Besides all this, $20,000 was donated by Mr. Law, while at least $30,000 was donated by Wm. E. Dodge, Abram S. Hewitt and some others.

Enough has already been donated to the school to insure its support for at least three years to come.

The work will not only include that of the nursery, orchard and garden, but also greenhouse work, dairying and poultry growing will be scientifically taught. Such practical studies will be pursued as botany, chemistry, geology, stock, husbandry, building construction, economic entomology and bookkeeping, while trips will be made, at the right season, to the city to board from the public market the best methods of packing, shipping and handling the fruits, vegetables, etc.

Hawaii and Holland have each already contributed a student.

This is the kind of a school that should be established within reach of every city in the United States. In fact, such a course of instruction should be given in every college and high school throughout the land. It would develop not only a class of educated, practical farmers, horticulturists, dairymen and poultry keepers, but would also lead thousands of young men and women from the overcrowded professions and poorly paid, uncertain clerkships to a life of independence, sure living and progress, out in the green fields, in the glad sunshine, doing the first work God assigned man to do, that of caring for a garden.

PROFESSOR WAUGH'S VIEW OF THE APPLE MARKET.

The following report was sent out by the Vermont Experiment Station:

The apple crop in the United States and Canada is unusually large, and prices are correspondingly low.

In fact they are too low. They are bound to go up.

This is practically proven by the rapid manner in which speculators are taking up all the apples in sight. Apple speculators do not buy on a falling market.

Professor Waugh of the Vermont Experiment Station, in speaking of this matter, points out that there are certain features of the situation that the apple growers have generally failed to appreciate. He sums them up as follows:

1. The crop has been (practically, if not absolutely) overestimated. The statements that the present crop greatly exceeds that of 1896 have been very industriously circulated by the apple buyers and solely in the endeavor to keep prices down.

2. The market has been underestimated. It has been assumed that the market is no better than in 1896, while the fact is that it can handle a much larger quantity of fruit. Then the market was not organized. Buyers were not in touch with sellers. Especially the whole European outlet had not been developed. Now all that is changed for the better. Then growers

shipped thousands of barrels of windfalls and worthless fruit which this year they will have sense enough to keep at home.

3. The market has been temporarily unsettled by the great quantity of fall fruit sent in and by that remarkable crop of windfalls harvested by the September gales. Buyers have shrewdly taken advantage of this temporary demoralization to contract for winter apples, though late-keeping varieties are not properly affected by it.

4. The probable price of winter fruit has been generally underestimated. The price has ranged thus far from $1 to $1.50 a barrel, although a few lots have been contracted at $2 or even as high as $3. These latter figures do not represent the present market offerings, however. For even in 1896, when all possible adverse conditions conspired to keep down prices, good winter apples sold late in the season at $2.50 to $4 a barrel. The same class of fruit, at the same season, will doubtless sell higher this year.

The permanent moral is that only late-keeping standard market varieties ought to be grown, and that the grower ought to put himself in a position to hold his apples for a few weeks or months when necessary; and the golden text, for immediate application, is that the growers who have first-class winter fruit on hand ought not to sell any sooner than circumstances compel them to.

* * *

The above is all very good but it is a difficult matter to tell whether it is better to sell early, or hold until mid-winter or spring. Last winter millions of dollars worth of apples were lost that were placed in cold storage. It has occurred several times, and may again, that apples are worth nearly as much in the fall as in the spring. Then again, the fruit may be ripe in the fall and will not keep, no difference what kind of cold storage is used.

It pays the grower to have good facilities for storing and keeping his own fruit, and then selling it whenever his judgment dictates the price reasonable, be that in the fall, winter or spring. Yet one must obtain a big price in the spring to offset the loss by rotting and shrinkage. Many experiences could be related, not only by Chicago commission merchants, but those in other cities, as well as fruit growers who have lost heavily by holding too long. And yet there are instances where it would have paid to have held longer. Ed.

Courtesy of Santa Fe

AN IRRIGATING CANAL.

The above picture represents an artificial waterway near Phoenix, Arizona. Good crops of fruit and vegetables are produced where the land is properly irrigated. For a good, dry, mild, sunshiny, healthful climate, Arizona is perhaps unsurpassed.

BOB WHITE.

You are calling as sweetly to-day, Bob White,
As you were in the days gone by,
When the butterfly slept in the heat of sun,
And the spider his lace on the haystack spun,
While a bare-footed reaper followed your flight
With his rompling, careless cry.
You are calling as sweetly to-day, Bob White,
As when stars of the evening sky
Shed their rays dor two, on the country lane,
Who never will roam hand to hand again,
While the whippoorwill sings through the tender light,
With a song like a yearning cry.
You are calling as sweetly to-day, Bob White,
As you may in the by and by,
When a calm steals over the heart at last,
While the curtains of mist fall around the past,
And the songs of the summer day and night,
That to some one are only to cry.

Joseph P. Conn, in Boston Globe.

WHY QUINCE TREES DO NOT BEAR.

One of the reasons why quince trees do not produce more fruit is because they are not pruned properly, states the American Cultivator.

Usually, there is about every neglected quince tree a number of sprouts that start either from the base of the trunk or from injured roots near the tree. These should be removed, and the work should be done while the tree is in leaf, as there will be less danger of new sprouts starting up. Then, when the tree has been reduced to a single stem, remove the short branches growing up in a thicket in the center. Some of these may have fruit on, but do not spare them for that. If the quince tree has been long neglected, there will be more or less dead limbs, which have been so long shaded by foliage above them that they have died. All these should be cut out. Air and light are as necessary to the quince as to any tree that grows.

MICHIGAN PEACHES.

A writer in Sugar Beet after a visit to the big peach farms in the vicinity of St. Joseph, Mich., this past fall, says that it was enough to turn the head of an average man. He wrote: "The sight is simply wonderful, and the results from a few estimates made are amazing. Peach trees grown for heavy crops and thinned last spring till it seemed that only one-tenth of the crop was left to grow are now weighted to the ground with fine fruit. The output from some orchards was estimated at 10,000 bushels, from others 25,000 bushels. Early in September the Elbertas went on the market and this variety is certainly the most popular peach ever grown in Michigan. From the Morell farm over fifteen carloads of peaches have been shipped. At the Highland fruit farm packing house, with a force of forty packers and plenty of pickers, 1,000 bushels were sometimes handled in a day.

"The number of packages of fruit handled from the twin cities in one day was over 70,000. Six steamboats, some of which made two trips daily, special refrigerator fruit trains on three different roads carrying over sixty carloads of peaches to all points in the east and west, besides what two express companies handled made returns for one day alone of not less than $70,000 to the fruit growers of that vicinity. This work went on for four weeks. One day the output was 100,000 packages.

FRUIT LANDS IN SOUTHERN ILLINOIS

FOR SALE BY THE

ILLINOIS CENTRAL R. R. CO.

Early Fruits & Vegetables of all kinds. Apples, Pears, and Peaches that are without rival in flavor, are produced in greater abundance and larger profit on a less amount of land than is required in any portion of the State. This result is effected on Southern Illinois lands, because of the soil, climate, location and unequaled facilities for transportation to Chicago.

Do not go elsewhere to buy lands for fruit farms until you have seen Southern Illinois.

These lands are well adapted to grazing cattle, hogs and sheep, and also that new specialty

ANGORA GOATS

special inducements and facilities offered by the Illinois Central Railroad Company to get and retain these lands. For full description and map and any information address or call upon

E. P. SKENE,

Land Commissioner I. C. R. R. Co.,
Room 401 Central Station, Chicago, Ill.

Please mention this journal when writing.

California and Its Great Fruit Crop.

CALIFORNIA

A sleeping beauty, hammock swung,
Beside the sunset sea.
And dowered with riches, wheat and oil,
Vineyard and orange tree.

—Anon.

The California Fruit Grower, a weekly paper published at 320 Sansome street, San Francisco, in November 3 issue published its annual resume of the fruit industry of our greatest fruit state. This annual number contained 74 pages of most valuable and interesting information and we are indebted to it for all of the following statistical information:

THE SEASON'S CROP SUMMARY.

(Carloads Estimated at 10 Tons)

FRESH FRUIT SHIPMENTS
Interstate
193,900,000 pounds
9,695 cars.

CURED FRUIT OUTPUT
(Prunes not included)
68,500,000 pounds
3,425 cars.

PRUNE OUTPUT
114,227,000 pounds
5,711 cars

THE RAISIN CROP
71,568,000 pounds
3,578 cars

CANNED FRUITS AND VEGETABLES
3,756,600 cases

TOMATO PACK
583,000 cases

ORANGE AND LEMON SHIPMENTS
Interstate
6,624,000 boxes
18,400 cars

BEET SUGAR OUTPUT
64,890,000 pounds

WALNUT YIELD
11,160,000 pounds
558 cars

ALMOND OUTPUT
4,640,000 pounds
232 cars

GOLD OUTPUT
$15,336,031

PACIFIC COAST SALMON PACK
3,138,000 cases

HOP YIELD
59,000 bales

WHEAT FLOUR
33,743,000 bushels

WOOL CLIP
28,332,000 pounds

HONEY YIELD
2,822,000 pounds
141 cars

VEGETABLE SHIPMENTS
Interstate
68,100,000 pounds
3,405 cars

DRY AND SWEET WINES
23,433,000 gallons

BRANDY PRODUCTION
3,256,513 gallons

BEAN SHIPMENTS
41,516,000 pounds
2,076 cars

SHIPMENTS OF FRESH DECIDUOUS FRUITS.

Calendar year—	Pounds.
1890	74,646,000
1891	98,680,000
1892	111,689,000
1893	159,900,000
1894	179,576,000
1895	132,587,000
1896	115,300,000
1897	145,250,000
1898	139,550,000
1899	193,900,000

An examination of the shipments of deciduous fruits for this year from California as compared with those of last year discloses some interesting features. Shipments of cherries were nearly three times greater than in 1899, 237 cars as compared with 86. Shipments of apricots were 151 cars this year against only 91 last year. Peaches show a very marked decrease this year, only 1,360 cars being forwarded as compared with 2,609 last season. Plums and pears made a big yield this year and this is shown in the larger shipments, both varieties showing an increase of about one-third. Grape shipments up to this writing are about the same as to quantity, as those of last year. California deciduous fruits are now successfully shipped to Great Britain, and according to London dealers are going to be in greater and greater demand. Last year 42 car loads went to England and this season 121 cars. Quite a respectable increase.

ORANGES AND LEMONS.

LAST SEASON'S CROP THE LARGEST ON RECORD AND A BIG ONE COMING.

Such are the climatic and other conditions obtaining in California that it is difficult to say just where the orange season ends. All agree that it commences on or about November 1. The season sometimes ends with July, but frequently, this year for a case in point, oranges have been shipped to eastern markets right up to the time that the new crop of fruit comes in, making the season in reality from November to November, an endless chain. This peculiarity of the California orange season promises to become more and more pronounced in the future. This is in striking contrast with other orange producing sections the world over, where a much more limited season is the rule.

THE SEASON JUST CONSIDERED.

The citrus fruit crop of California for the season just concluded—that is, 1900-01, promises to be the largest ever produced in the state, a fair estimate being, barring frosts and other unforeseen unfavorable conditions, around 23,000 car loads. The first car of new crop oranges went forward from Porterville early on the morning of October 26, the fruit being well colored and of good size.

ORANGES AND LEMONS.
Interstate shipments.

Season.	Carloads.	Boxes.
1892-93	5,871	1,972,500
1893-94	5,022	1,687,500
1894-95	7,575	2,545,200
1895-96	6,916	2,323,500
1896-97	7,350	2,469,600
1897-98	15,400	5,174,400
1898-99	10,875	3,654,000
1899-00	18,400	6,624,000

LAST SEASON'S CROP.

The first car of California oranges of the season 1899-00 was shipped from Porterville on October 31 and was sold to Canadian parties. Shipments were made from southern California on November 10 and 13. As already stated, the crop was a bumper, something like 6,624,000 boxes. At an average price for all oranges and lemons during the season of, say, $1.60 a box, f. o. b., the sum left in the hands of growers would be over $10,000,000. The railroads would derive an income of nearly $5,000,000 from citrus fruits and jobbers and supply men would receive about $2,500,000.

THE CALIFORNIA LEMON.

The prejudice which existed until quite recently in this country against the domestic grown lemon is fast disappearing and American consumers of the fruit are beginning to appreciate the fact that as fine lemons can be obtained from the state of California as ever came from Mediterranean ports. As far as shape, size, juiciness and good keeping qualities are concerned, the California product has within the past four years become a dangerous rival to the best of Italian and Spanish fruit.

A large crop of lemons is indicated from every producing section in California. San Diego growers agree that the crop of fruit now on the trees will be larger and better than last season. The groves are in particularly good shape and a yield larger than that of any previous year is expected. Young trees are coming into bearing and the old trees are showing more fruit each season.

THE CURED FRUIT INDUSTRY.

Last Year's Output Almost Double That of the Previous Year.

A COMPARATIVE TABLE OF THE CURED FRUIT OUTPUT.

Prunes and raisins are treated separately elsewhere in this issue.

Year.	Pounds.
1895	57,960,000
1896	42,775,000
1897	70,110,000
1898	37,400,000
1899	68,500,000

Generally the year 1899 was not a profitable one to the cured fruit producer, packer, jobber or retailer. With the exception of apricots a good average pack in each important line was made. The crop of apricots was very short in northern and central California, the cured product being light owing to the high prices paid by canners for the fresh fruit for canning. The great part of the cured apricot total was produced in the southern part of the state, principally Ventura county. The first shipments of cured apricots and peaches are generally from the Visalia or Hanford districts. In 1899 the first cured peaches went forward on July 15, from Visalia.

CURED FRUIT OUTPUT BY VARIETIES.
In pounds.

	1897	1898	1899
Nectarines	985,000	180,000	840,000
Apricots	30,125,000	8,210,000	11,600,000
Apples	5,250,000	3,520,000	5,900,000
Figs	3,250,000	4,780,000	5,800,000
Pears	6,350,000	6,620,000	5,760,000
Plums	3,250,000	2,460,000	3,300,000
Peaches	27,150,000	10,960,000	31,800,000
Grapes	3,450,000	640,000	440,000
Total lb.	79,100,000	37,400,000	68,500,000

THE FIG—ITS CULTURE IN CALIFORNIA.

The fig, fig raising and fig curing and marketing are receiving an increased attention in this state as the years go by. Among the counties, Fresno produces the largest part of the fig crop of California. Southern California, and Madera, Sutter and Merced counties are also prominent as contributors to the general fig output. The first crop of figs is consumed chiefly in a fresh state. The second is the chief crop and from the middle of August to the latter part of October the fig-packing season is in full swing. The annual fig output of California shows a very uniform yearly increase as will be seen in the first table with this article.

Prices, which are considered fairly satisfactory, ruled this season about the same as last. The fig crop this year for the entire state is estimated at 300 10-ton cars, of which San Joaquin valley furnishes close to 200. Considerable difficulty was experienced in the early part of the current season in securing sufficient help to handle the crop, and, though very handsome sales had been made, packers were unable to make prompt delivery.

CALIFORNIA CURED FIG OUTPUT.

1895	3,750,000
1896	2,160,000
1897	3,250,000
1898	4,720,000
1899	5,800,000

FRESNO COUNTY SMYRNA FIGS.

Fig culture in California, and more particularly in Fresno county, has assumed an added importance this year through the successful introduction of the blastophaga, or fig-wasp. This is the insect which almost from prehistoric times has been depended upon by the Asiatic, Greek and some other fig orchardists as the means by which their fig flowers, which are inaccessible to other insects, were pollenized, thus insuring a fig crop.

In Fresno county are many fig trees grown from cuttings taken from the famous Aidin district, distant about seventy five miles from Smyrna. These trees, known to be of the same variety as those which produce the highly prized imported figs of commerce, have never matured a crop until this year, when as a result of the introduction of a colony of blastophaga, a partial crop of about six tons of cured figs resulted. In size, flavor and other qualities these "genuine California Smyrna figs" are the equal of the imported article.

The colony of fig wasps has increased healthily and rapidly and by next year there will be enough of those insects, it is believed, to caprify all or nearly all the figs that may form on the Smyrna trees in Fresno county, thus insuring a full crop of this superb variety in the two orchards capable of maturing fruit.

ALMONDS AND WALNUTS

California Orchards Make a Good Showing but the Trade Field Is Not Yet Filled.

CALIFORNIA ALMOND AND WALNUT YIELD.

Year.	Pounds.
1895	12,420,000
1896	9,510,000
1897	12,400,000
1898	12,900,000
1899	15,800,000
1900 Estimated	12,500,000

THE WALNUT IN CALIFORNIA.

Walnuts are grown successfully in widely separated sections in California but the bulk of the state's walnut shipments go forward from southern California. Even there the localities possessing the requisite climatic conditions are limited.

The crop of 1900 is reported short of early estimates. Owing to peculiar climatic conditions large quantities of nuts are developed in grading. From an anticipated 600 car crop the estimate is now down to 450 cars, or 100 cars short of last season.

The walnut crop of 1899 aggregated 558 carloads.

ALMONDS.

Among the orchard tree varieties of California not one has caused more disappointment than the almond. Because of its early blossoming habit and the liability to be nipped by frost it has too often failed to fruit in a satisfactory manner. Then too, bees are not as active when the almond is in blossom as later, and cross pollinization is not as perfect as it otherwise would be.

To show the vagaries of the fruit it may be stated that the almond crop of California in 1897 was a fair one; in 1898 it was almost a failure, only about forty carloads; in 1899, the crop was a good average one, about 232 carloads, and this year, 1900, it is still larger, say 240 carloads. The heavy yield this year is due to a favorable season, the increased age of trees and the coming into bearing of many young trees.

THE EUROPEAN CROP.

The European crop last year was 71,500,000 pounds of shelled almonds; this year the crop was seriously damaged by frosts, the output for Europe being estimated at not to exceed 21,350,000 pounds. Under this condition an active demand set in for California-grown almonds prior to the harvest. The demand became so urgent from all parts of the United States that prices went up 50 per cent. While the almond crop is not to be disappointing there is large profit in a good crop.

OLIVES AND OLIVE OIL.

AN INDUSTRY WHICH PROMISES WELL FOR THE FUTURE.

The age of the oldest group of olive trees in California is over ninety years. They are six in number and stand about the San Gabriel Mission, near Los Angeles. They still bear fruit and are living monuments to the wisdom of the Franciscan Fathers. The oldest single olive tree in the country is that at Capistrano Mission, Orange county. Its seed came from Corsica in 1769.

The olive industry in the United States is distinctively confined to California and promises to become an important branch of State horticulture. The olive is extensively planted in all the valley districts of California and does well as far north as Shasta county and in the foothills up to an elevation of 1,500 or 2,000 feet.

At this stage it is difficult to predict the future of the industry, but it seems evident from the work so far accomplished that the olive will become one of the important products of the State. The pickled ripe olive is much esteemed, and very generally, while on California tables it has almost entirely displaced the pickled green olive. The green olive when pickled has not yet developed its oil; the ripe olive is ready for the press. Nothing more healthful or delightful is produced than the pickled ripe olive and so far the home market takes about all of this product. It furnishes a greater profit to the grower than when pressed and in oil.

The culture of the olive in this country, even in its limited quantity, has led to the cultivation of the taste for it so that the consumption both of the pickled product and the oil has increased steadily.

RAISIN CROP.

Eighteen or twenty years ago the production of raisins for commercial purposes in America was practically unknown. Sixteen or seventeen years ago the first carload of California raisins was seen in Chicago. Twelve years ago California raisins, as they were cleaner and better, were displacing the foreign product. Seven years ago the California raisin was in undisputed control of the American market and in still later years California raisins have been exported to European countries in quantity. With the introduction of the seeded raisin the practical capture of the last remaining markets of the world would seem to be assured.

CALIFORNIA RAISIN CROPS.

Year.	Pounds.
1896	68,250,000
1897	52,700,000
1898	80,631,000
1899	71,505,000

Of the California crop of raisins for 1900 it may be said that it promises to be somewhat larger than the crop of last year though just how much larger cannot be stated definitely. With the interruption of but one storm the weather during the curing season was almost perfect. As a result the bulk of the first crop has turned out standard grade and high grade at that.

CURED PRUNE OUTPUT.

An Annually Increasing Yield Characterizes the State Crop.

PRUNE OUTPUT OF CALIFORNIA.

Year	Pounds
1896	56,200,000
1897	87,720,000
1898	90,420,000
1899	114,297,000
1900 (Estimated)	125,000,000

The California crop of prunes for 1900 is very large, estimated at 125,000,000 pounds of what is somewhat arbitrarily classed as No. 1 merchantable prunes, no fruit smaller than 120 to the pound being included. Small sizes predominate and large sizes command a very substantial premium.

The depression existing at present in the prune industry is not confined to California, or to any single section; it is world wide. Advices received from Russian state that "large sizes are abundant, prices low and the market dull. Reports are received in consequence of the large fruit crops in all western countries of Europe and the cheap offers of the French and American competition." Our French correspondent reports a fairly active business with Germany but at low prices. Prices in California are low enough to warrant a large consumption throughout the United States. When new prunes of excellent quality can be retailed at a profit for five cents per pound in the east there might to be a very noticeable increment in the primary market.

A LARGE QUANTITY OF
ROSELLE FRUIT
now ready for wholesale dealers or the trade.
Progress Grove Nurseries, - Greenland, Ala.

Fair Oaks.

FAIR OAKS.

On our front cover page is a view of some of the magnificent oak trees that are responsible for the name given the fruit district on the American river in California, known as Fair Oaks—one of the most beautiful spots on the face of this broad earth.

Six years ago herds of sheep roamed among these lordly trees and over the rolling knolls of the old San Juan grant. A few years previously a number of enterprising and confident fruit growers had set out several hundred acres of land just east of the San Juan grant in oranges and called the district Orangevale. Many wise ones shook their heads and prophesied failure, but the orange trees kept on growing and at the time of which we speak were bearing their first good crops of fruit.

Then the owners of the San Juan grant were induced to allow a portion of their land to be offered for sale. A fine pipe-line was put in for irrigating purposes and in a very short time nearly 2,000 acres of land were sold. A good portion of this was set out in oranges and olive trees, and its five-year-old orange orchards are this year well laden with fruit.

Fair Oaks lands in their natural state resemble a vast rolling English park. The wonderful green sward, covered with scattered groups of giant oaks, and gay with millions of wild flowers, presents an appearance that fascinates every lover of nature, and makes him feel that it is a veritable paradise for a rural home; while its cultivated sections, covered with thriving orchards, tell of comfort, plenty and wealth. It is situated on the American river, and is one of the most picturesque regions in the world. Its fertile orange knolls command magnificent views of vast orchards and vineyards and distant snow-capped mountains.

EASILY REACHED

Fair Oaks is a thriving community with a prosperous church, an academy, a public school and a hotel. It is situated only fourteen miles from Sacramento, and a mile and a half from a railroad station. An electric railway is soon to connect it directly with Sacramento. This electric road will carry both freight and passengers.

THE HEART OF CALIFORNIA.

Fair Oaks is situated in the Heart of California. And what do you know about the Heart of California? If you live in the East, you have probably heard and read very little about this great fruit region. Your attention has been turned wholly to Southern California, and you have been led to believe that most of the fruits of the state are raised there, that the only place for a winter residence is there, and that the other parts of the state, excepting the Yosemite and San Francisco, are hardly worth visiting.

Without in any way depreciating Southern California, it is safe to say that when compared with the great central portion of the state, its attractions, resources and possibilities are not of the superior order which they have been supposed to be. The comparison is that of a vast, arid, sage-brush plain, parts of which have been reclaimed by irrigation, with a vast fertile park, verdant throughout under natural rain-falls. An enormous amount of Eastern capital and human energy have redeemed portions of the southern desert and made them beautiful, but the moment you step out of the irrigated region you are in desert surroundings again.

The central part of the state, watered by the Sacramento, San Joaquin and American rivers, and by timely rain-falls, appears like a garden of Eden.

The orange ripens here weeks earlier than in Southern California.

Seventy-five per cent of the deciduous fruits of the state are grown within a radius of fifty miles from Sacramento City.

It contains the noted Ehinno Tokay district.

It has the second largest vineyard in the world.

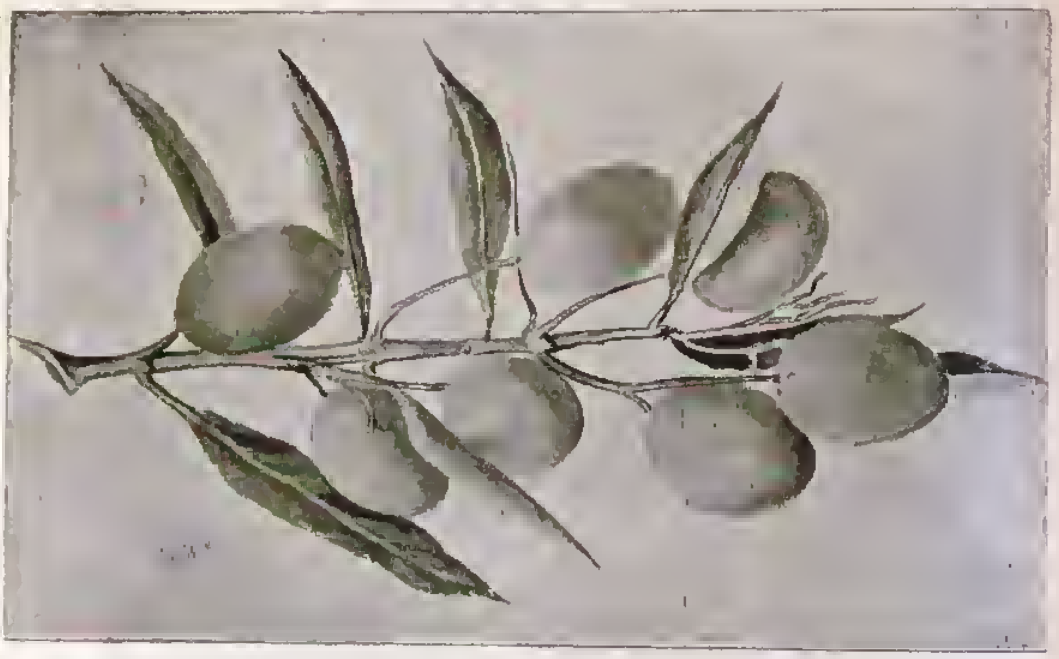
It has the largest thoroughbred breeding farm in the world.

It has the largest gold dredge in the world.

A failure of crops in this district has never been recorded.

It has no sunstrokes, sunn or blizzards.

It has an average rain-fall of twenty inches.



A BUNCH OF NEVADILLO BLANCO OLIVES.

The above picture was made of fruit grown in California.

Olives were first brought to California from Spain by the early Spanish mission fathers; and much improvement has been made on these old varieties. The trees do not produce much fruit, usually, until ten or twelve years old. Good olives have also been produced in Florida.

The lands of Southern California have been sold by the most skilful and continuous advertising throughout the East. The lands of the Heart of California have never been advertised to any great extent in the East for two reasons: First, because they were held by people who were making fortunes from them, and did not care to dispose of them; and secondly, because they were so valuable that if any of them chanced to come into the market, they were at once bought up by local parties. For years it has been almost impossible to buy from the owners the comparatively productive fruit lands which lie in the vicinity of Sacramento; and there has been little chance for development companies to operate in this part of the state.

SOME FACTS CONCERNING SACRAMENTO COUNTY.

It is the heart of California's early fruit belt.

It is the home of all citrus and deciduous fruits.

The climate averages about the same temperature as that of Los Angeles.

It is the ideal winter resort.

SOME FACTS ABOUT FAIR OAKS.

Fair Oaks is now five years old. It is on one of the finest old ranches which was held for many years by its owners, who were finally induced to sell a portion of it to be subdivided for fruit-growing purposes. It contains some of the best orange land in California.

A tenacre orange orchard in Fair Oaks will bring the surest income that can be secured for fruit raising. Oranges orchards begin to bear the fourth year. After they are eight years old they bring in from $100 to $500 an acre net. The orange crop is marketed in Fair Oaks five weeks earlier than in Southern California.

A $30,000 bridge over the American river is now in course of construction at Fair Oaks.

Fair Oaks lands are irrigated by the finest pipe land in the state, which brings the water from a reservoir supplied by

the American river. Residents at Fair Oaks have water in their houses just as in the city, with all the sanitary conveniences of bath rooms, etc., and the water is cheaper than it is in Chicago with Lake Michigan at its service.

AMUSEMENTS.

Fair Oaks has a social club, a base ball nine and a tennis club. Mind you, these are not the town people, but those living on the different fruit tracts all over the district. One illustration shows a tennis game in progress with one of the large oaks in the background with benches under it for the spectators.

CHICAGOANS AT FAIR OAKS.

A number of business men in Chicago who purchased land at Fair Oaks and have it set out to oranges and olives formed themselves into a "Fair Oaks Association." The names and business of these men will give a fair idea of the kind of people who are investing at Fair Oaks. They are:

Andrew T. Hodge, treasurer Chicago Paper Co., paper.

Alex. J. Hodge, salesman J. W. Butler Paper Co., paper.

Alex. Craig, with A. R. Barnes & Co., printers and stationers.

J. H. Bulfinn, oculist and aurist.

Sheldon F. Patterson, editor on the Chicago Times-Herald.

Washington I. Miller, general ticket agent The Pullman Co.

Arthur E. Wilcox, of Pilkins & Brooks, wholesale crockery.

George Smith, of Clement, Bane & Co., wholesale clothing.

Clay Larimore.

C. W. Ruggles, general passenger and ticket agent Michigan Central R. R.

Geo. E. King, assistant general passenger and ticket agent Michigan Central R. R.

Frank J. Brimhall, general passenger office, Michigan Central R. R.

ORANGE PROSPECTS.

The orange lands of the country are exceedingly limited, and will soon be taken up. Those in the choicest citrus belt of California will soon be disposed of. There is no better investment than a fine orange orchard. An orange orchard ten years old in good condition commands from $1,000 to $2,000 an acre. If you desire to raise any of the deciduous fruits, you can find no better conditions for such orcharding than those offered by the rich irrigated lands of Fair Oaks.

If you have any thought of investing in an orchard or a home in a winterless clime, you should certainly know more about Fair Oaks at once. You will never have a better chance to secure a beautiful home and a productive orchard at a reasonable price. The prices of the lands are low considering their value, and the terms are easy.

If you have been interested by this article send to the American Fruit and Vegetable Journal for literature. Or if you wish a beautifully illustrated book, showing you various photographic views at Fair Oaks, fruit trees, the lay of the land, prospects of the country and what can be done in the way of fruit growing, send us 10 cents in stamps to pay postage. It will be a very attractive book on your table.

* * *

The officers of the Fair Oaks Development Company are:

President, Rev. Chas. A. Dickenson, of Berkeley Temple, Boston, Mass.

Vice-president, Walter Raymond, of Raymond & Whitcomb, Boston, Mass.

Secretary, L. F. Hatfield, attorney at law, 203 J street, Sacramento, Cal.

Treasurer, V. S. McClatchy, publisher "The Evening Bee," Sacramento, Cal.

Director and Manager, Stephen K. Kieffer, Fair Oaks, Cal.

The California State Bank of Sacramento, Cal., will act as trustee, for the purchaser, of all moneys paid to the Fair Oaks Development Co. for land at Fair Oaks, Sacramento county, Cal.

ORANGE SELLING PRICES.

The first real good sale of oranges for the season that has been reported is one made by Charles Condon, whose place is near the Point of Rocks. The Riverside Enterprise says: "Mr. Condon has something over four acres in oranges and he has sold the crop for $1,800 to the New shipping firm of Rothbock, Trench & Co. Mr. Condon received $1,000 down and the remainder of the purchase price is to be paid when the shipping of fruit begins."

The State Horticultural Society of Indiana will hold its annual winter meeting at Indianapolis, Dec. 18 to 20.

United States Chemist Wiley, of the Department of Agriculture, estimates that there is produced each year in the United States an average of 31,000,000 pounds of potato starch. Of this amount Aroostook county, Me., produces 12,000,000 pounds.

TENNIS IN JANUARY, AT FAIR OAKS, CALIFORNIA.

FRUIT AND NUT SHIPMENTS

For purposes of comparison the shipments, comprising fresh deciduous fruits, citrus, dried, and canned fruits, raisins, and walnuts and almonds for a series of years, from California, are given in table form. It is so nearly self-explanatory as a table can be and the student of the Indiana's figures will find in it much that is interesting. The table follows.

COMPARATIVE TABLE OF FRUIT AND NUT SHIPMENTS.

In tons of 2,000 pounds each.

Year.	Fresh Deciduous Fruit.	Oranges and Lemons.	Dried Fruit including Prunes.	Canned Fruits and Vegetables.	Raisins.	Walnuts and Almonds.
1896	31,013	34,200	32,310	[illegible]	20,563	780
1897	50,750	46,025	34,025	32,480	32,860	1,801
1898	50,375	31,860	29,770	38,280	28,081	2,075
1899	79,930	80,828	41,700	37,851	41,438	1,795
1900	89,788	50,193	51,770	30,082	17,950	3,051
1895	64,981	115,820	44,327	31,208	16,788	3,291
1897	77,650	40,175	48,570	43,012	34,178	4,097
1899	72,627	95,671	88,146	73,470	28,003	5,810
1898	93,775	180,030	70,700	52,290	47,810	5,820
1899	105,850	131,917	86,930	75,240	30,016	6,430

Note. Shipments for calendar years include any carry-over from the previous season.

GROWING PECANS.

The Bradford Co. Telegraph has much faith in pecan culture. It thus expresses its views and describes a new grove:

The subject of pecan culture in this section has been discussed for years, but owing to bad luck with some other kinds of fruit trees our orchardists have hitherto been shy about setting out pecan trees on a large scale. But careful investigation has convinced them beyond a doubt that the tree is worth planting for the following reasons: It will do well on any land having a good, not too wet subsoil; it is a quick-growing tree, requiring little cultivation and manure and being singularly free from diseases and insects, it bears heavily and regularly and there will always be a brisk demand for the nuts.

Several of our progressive citizens have made up their minds to set out pecan orchards, and the initiative has been taken by Fred S. Dawson, the cigar manufacturer. Mr. Dawson owns a fine tract of land about two miles south of town and a part of it will be set to pecans in the late fall. This portion of the land should be an ideal site for a pecan orchard, having sufficient natural drainage and a good subsoil—the latter being indicated by a heavy growth of beggar weeds. Mr. Dawson employed a professional orchard maker to stake out three acres of it for improved pecan trees, to be set later in the year, and in a nursery will be planted nuts to supply trees for an additional four acres, making the ultimate area of the orchard seven acres. The home grown seedlings will be grafted with scions from the improved kinds, Texas pecans, a few walnuts, nut berries and grape vines will also adorn the place.

Although Mr. Dawson is very sanguine as to the result of his adventure, he does not intend to leave anything to chance, but will give his young orchard all the care which his extensive experience in tree culture can suggest. The Telegraph wishes Mr. Dawson success in the new departure and hopes that his example will soon be followed by others, for, judging from the good results already obtained from individual trees in this section, a nut orchard is bound to prove a paying investment.

KEEPING SQUASHES THROUGH THE WINTER.

My method has been to place the squashes upon shelves in a well ventilated cellar, says a correspondent in the New England Farmer. The shelves are four feet wide next to the sides of the cellar. The remaining ones are six feet wide, with alley on each side. The first shelf is six inches from the floor, and then they are two feet apart until the ceiling is reached. I use 2x4 studding for uprights and crosspieces and 1x6 strips for bottom of shelves. One of these strips is sufficient for the side. The upright should be placed four feet apart, as the load they have to sustain is considerable. The temperature should be as high as possible without using artificial heat and interfering with good ventilation. This is best accomplished by keeping the cellar closed on rosy cold days and particularly during periods of foggy and rainy weather. Choose the bright days for opening during the middle of the day.

With the best of conditions and best of care there is quite a loss and more depends upon time and manner of gathering crop than all else. Because the squash has a hard shell and does not show the effects of a long frost, it is often left too long on the vine. I plan to gather them just before the first frost. This can usually be accomplished if I am ready to put all my help to work as soon as I think a frost is on the way. I pick them and place in piles about six rods apart, covering them with their own vines. As the weather becomes rubber I draw them in truck wagon with springs and hay rack with about six inches of marsh hay on that. I handle them as carefully as possible, loading only three or four deep on the wagon and carrying them into the cellar in baskets and placing on shelves two deep. I am careful to sort them, using the soft and bruised one for feed or sell them for immediate consumption.

GROWING IRISH POTATOES.

For American Fruit & Vegetable Journal.

By W. E. Ives.

One of the most vital questions to the producer of potatoes is the prospective price, whether to hold for advance or sell on the market. The purchaser for consumption or for use for seed purposes is interested in this pertinent question and at the present writing the prospects are for an advance and a continued active market; at least, with prices averaging well with last season's crop. Making a fair comparison of reports from correspondents in the heavy producing sections for '99 and 1900, there is fair prospects of an advance over last season.

EXTRA PRODUCTION

is the rule this season in most sections, varying in the same counties from very poor to exceptional, in both quality and yield. Prices as compared with 1899 are advanced in the south, central, eastern and New England markets, and on the whole prices will be in the producers favor where shipping facilities are ample and distance from market not too great.

NOTES FROM EXPERIMENTAL FIELDS. SPECIALTIES FOR THE MARKET GARDENER.

The Stray Beauty, as it is known in some sections, and in others as Bliss' Triumph, is a round, bright red and of good quality. It has a rival in the Extra Early Pink Eye, of the same shape and habit but with a white skin relieved by an occasional peach-blow coloring, showing in streaks and red dashes, the effect being heightened by "pink eyes." This is a good picture of a small green rival of the Triumph. The value of this sort lies in their extra early habit, the time of maturing, if anything, being in favor of the Pink Eye. Notwithstanding their very early habit, both these sorts are real good storage potatoes, keeping well in any fair cellar, and much better than many later varieties. The quality of the Extra Early Pink Eye is fully equal to the Triumph.

TO SECURE BEST RESULTS.

With these varieties a sandy loam, rich in humus and liberally supplied with stable manure, plowed under in the fall and refitted in the spring, will give the best results. But in any case secure a loose soil with natural conditions favoring sufficient moisture with a southern exposure, if possible.

PREPARATION OF SEED

For the first planting according to the mind, it will pay to select tubers of the size of a walnut and up to 2 ounces, placing in a warm enough room to start the sprouts to a good half inch; then having them ready for planting as soon as danger of severe freezing is over, planting the whole potato in hills not closer than 3 feet by 2 feet, and not over 3 inches deep, placing the potatoes with sprouts up, covering well, and if danger of frost appears, mulch or prepare for using a junior cultivator with the wings on, the object being to keep up safe growth of the sprout, the mulch or extra covering being easily removed as soon as danger of frost is over. No sprouts should be allowed to grow excepting the first one or two from the seed end, pulling all others out as fast as they appear.

For the second marketing and for general early market crop large seed tubers should be selected, and enough exposure of the seed allowed to start the sprouts, no more; then cut to form no more than three eyes to the piece, cutting so the piece will have a stem or body eye with a seed end eye on the pieces that would be too small to cut to one eye, and plant at once. Cultivation should be started within a week from time of planting, before the plants appear. After this the tillage should be rapid, close and deep. The second and third plowing should be with the cultivator, decreasing the depth and narrowing up the

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3 " 3 to 4 " " 100, 2.50,			" 22.00
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cultivator so that the roots are not damaged after they begin to spread.

The sets or new tubers should form early. When the plants are not over four to five inches in height the roots should not be disturbed, especially after sets are formed; but sufficient soil should be added by the cultivator to cover the sets from the heat of the sun and to keep tubers from being sunburned. The sooner these varieties can be laid by after sets are formed the sooner will there be early potatoes to sell. On small areas a mulch of straw or coarse stable manure is the best thing and with the exception of keeping the vines free from beetles nothing more can be done to forward the crop.

The success of an early crop cannot be secured without the main factors, sound seed, a loose fertile soil and early and thorough cultivation.

OVER STOCKED.

Many a good farmer and gardener can't be "stingy" with his seed; but if one will plant a few eyes, one piece in a hill, planted not closer than 3 ft. x2 ft., he will obtain the largest returns of marketable potatoes for the extra early crop. For a crop in mature three weeks later than first planting, and where the soil is very fertile, the distance apart may be lessened to 3 ft. x18 inches, with good results.

Application of these notes must be understood as relating to the varieties mentioned, with the exception of "Howe's Premium," which may be obtained in some sections.

FRUIT GROWING PROFITABLE.

By E. Mixer.

I stick tenaciously to the proposition which I made in the onset, that where the proper judgment is brought into play and backed by energy, perseverance, economy, and industry, fruit growing is profitable, and only in the majority of cases but in every instance. You may search from the Gulf to the Great Lakes, and from the Atlantic to the sunny slopes of the Pacific, and you will not find a single exception. It is not necessary for me (in order to convince you that there is money in fruit growing) to tell you that where nine hundred and ninety-nine men out of a thousand contend that fruit growing is a failure, in a section where the majority of the people think it absurd for a man to think of growing fruit for a market, that I have demonstrated the fact that from $100 to $150 per acre can be realized from plums, from $150 to $200 per acre on peaches or from $150 to $200 per acre on strawberries. Nor is it necessary for me to remind you that our president, Mr. P. T. Ramsey, has realized from $150 to $200 on plums per acre. Or that Mr. Stringfellow has produced from $150 to $300 per acre on pears, or that Mr. P. Faulkner of Waco has made from $150 to $300 per acre on peaches, or that novices from the Panhandle to Arkansas Pass are making from $100 to $300 per acre on fruits. Nor is it necessary for me to remind you that 25 miles square in the vicinity of Riverside, California, is producing annually $3,200,000 of oranges besides other fruits. Nor is it necessary for me to remind you that independent of the immense wealth procured from other fruits in California she produces annually 15,000 car loads of oranges, and has $13,000,000 in the enterprise. I can have this demonstrated, and convert the greatest skeptic under the sun, if he will only go with me to these sections, and behold the great work which fruit growing has wrought.

It has not only raised the price of lands from a nominal value until they are worth from $50 to $1,500 per acre, but it has caused the luxuriatory mansion to take the place of the adobe hut and the log cabin; it has given us the wire and the iron instead of the rail fences; the windmill instead of the old well sweep, and the tile drainage instead of the surface ditch; it has given us canning factories and fruit packers; it has given us schools and churches that dot a thousand hills; it has converted the jungle into a garden, and has made the desert bloom as the rose; it has changed the woof and warp of society, has infused new blood and freshness for research and made progress the eternal watchword, where the people were behind the times and extremely slow-minded; it has leased and the dredgers, paid debts, lifted mortgages, added to home comforts and furnished superior educational advantages. In short, it has made the land look as though it had been touched by the magician's wand, and you do not have to possess millions to invest in it.

And you do not have to depend on Wall Street; you are affected by money panics as little as any man in the land, and crashing banks affect you but little more than would a cyclone in South Africa; and you need not have any fear about glutting the market.—Paper read at Congress of Texas Farmers.

RETAIL FRUIT MARKET IN GERMANY.

A correspondent of the Oregon Agriculturist, visiting Germany, wrote the following from Stuttgart, on Sept. 17, 1900.

The market places of Europe are peculiar institutions, and withal very interesting to an American. Every locality has its peculiarity and, as it were, personal features. Some days ago we visited the Strasslburg market, where nearly everything is sold by the piece, and, later, the Ulvilure market, which is probably 80 miles south of the former place, and there found everything sold by the pound. I give a few quotations of prices which may be interesting to Oregon readers:

Two dozen small peaches, 12 pfennings, about 3 cents.

Twenty-five prunes, Italian or German, and of good size, 4 pfennings, or about 1 1-3 cents.

One basket of grapes about 1½ pounds, of fair size and quality, 24 pfennings, about 8 cents.

Twelve Italian prunes, best, 6 pfennings, about 2 cents.

One box huckleberries, about 1½ pounds, not fruit, quite fair, 20 pfennings.

Twelve apples 36 pfennings, pears, 12 pfennings per dozen; peaches, 24 pfennings per dozen.

At Freiburg fruit was selling generally about one half higher than at Strasslburg but it was of a much better grade both as to size and quality. Italian prunes were selling here at top prices and they were abundant. The apples and pears of this section surpass anything I have ever seen outside of Paris. Yet, generally the crop is so large that fruit is low priced. For some samples of the best plums and peaches we paid 5 cents per pound, but a man at Zabringen sold the fruit from an hundred well loaded plum trees seven years old for the market about $28.

All fruits along the upper Rhine and on the northwestern border of the Black Forest have borne very fair this year. Grain crops and farm crops in general look excellent, and on the whole this appears to be a very substantial section of Germany. The soil is darker, deeper and fouler than that of France.

THE BEST PLACE TO GROW PEARS.

Charles Collins, at an institute held recently in Pennsylvania, said his best pears last fall were on his wettest land and wet the trees can not grow to any size. On a neighbor's farm, that is so poor that he could not keep a deed of it if he did not put something on it to keep it from blowing away, were the fairest pears he had seen last year.

Thomas Roberts said the two prettiest pears he had seen this season grew under the eaves of an office building, where the sun hardly got a shot at them. Manning he continued has made in the world the quality of the pear crop. Some years ago one of the orchards had a heavy setting of fruit that was as pretty as one would wish to look at, but turned out to be pear and rusty and good for nothing. He was not discouraged, but began feeding the

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trees, and ever since they have borne prodigiously of the choicest, sweetest fruit imaginable.—Christian Witness.

COVERING WOUNDS IN TREES.

The wounds made in the stems of trees by pruning, or otherwise, should have the wood preserved to keep it from decay until the new bark and wood extends over it, but gum shellac dissolved in alcohol is far better than paint. Put the shellac into a wide-mouthed bottle, cover it with alcohol and let it stand twenty-four hours, when it may be applied with a swab or brush. It serves, as nearly as may be, as the substance of bark; is not affected by heat or cold or wet or dry weather; and retains the sap up to the cut, healing the wound without a scar. Any limbs cut off square on top will have a dead end six inches to a foot, which will eventually die and rot off. Limbs should be cut off sloping—never square on top as is often done. Mechanics' Monthly.

OUR WINTER BIRDS.

By Prof. G. W. Fields, Rhode Island College.

(Concluded.)

There is a third winter visitor which is fond of entering sheds, barns and even houses to catch the mosquitoes, flies and other insects which stay in the buildings over winter to escape freezing, so that in the spring they may lay their eggs to hatch out a new crop of similar insects. He is one of the very smallest of our birds, only the humming bird being smaller than he. He is one of the gentlest and most confiding of all the birds. On several occasions one has flown in by the open window and remained for some days confidently catching insects in my study, apparently not noticing my presence at all. Several times he lit upon my head, and often within a foot of my hand as I sat writing. At length having eaten all the insects in sight in the room he made up his mind to leave, and he did so without saying good bye, though without doubt he left one for me, for I know we were good friends. You will know him when you meet him, from his small size, short tail, olive-grey color, and golden crown. This golden crown and his lustrous-like, fearless, lovely bearing have given him the name of Golden Crowned Kinglet (little king). If you do not already know him do not fail to make his acquaintance this winter. Do not wait for him to come to your house, but call on him in the pine woods any winter's day and if you are kind, gentle and polite he will be glad to see you.

Before the English sparrow came to us we could feed crumbs and seeds to flocks of black snow birds under our windows every day from the early fall to late spring. But nowadays the bright little blackie does not show his white vest and white nose so often in our dooryards. He can still be seen, however, in the hedgerows where he keeps company with the sparrows and the yellow-rumped warblers. You can recognize him by his dark slaty-black color, the white under the breast and the light colored beak, but most readily, perhaps, from the white tail-feathers bordering the black on each side. The black snowbird has a bright, cheery note and deserves cultivation. He is much beloved by the children of Nova Scotia and lands further north. They call him the "chipping bird." Unlike our chipping bird he builds his nest of moss on the ground, usually in a bank close to the house, and lays five white eggs, finely dotted with brown, while our chipping bird, you know, makes his home in an apple orchard, and lays the small blue eggs with black spots at the larger end, in a nest lined with horsehair. When you visit Nova Scotia in the summer or go up any of the higher mountains of New England you can see our friend the black snowbird in his summer home.

In mid-winter the wind whirls the snow about forming drifts and leaving patches of bare ground. These spots are the feeding grounds of seed-eating birds and such areas are soon stripped of all the weed seeds by crowds of small birds. These spots are excellent places to study winter birds. Notice that sometimes the old proverb "birds of a feather flock together" is not exactly true, for the flocks may be made up of birds of several different kinds of feathers. There may be the large yellow-breasted meadow lark, a giant among the sparrows and finches which make up the rest of the flock. Very often in this section the population which comes from one oasis to another in the snowy desert is composed largely of flocks of birds rather larger than an English sparrow, with longer bodies, light brown backs, and drab colored breasts, a black line across the face under the eyes, and a small bunch of black feathers extending backwards like a pen behind the ear. These birds you know as the horned lark or shore lark. They do so much valuable service by eating great quantities of weed seeds; thus undoubtedly they save you and me and our neighbors much trouble, for we shall not have to pull so many weeds next spring as we would if these winter birds had not searched the ground so carefully.

It often happens, however, that there are not weed seeds enough and hundreds of the birds starve to death. Let us then be thoughtful and scatter a few oats or canary seed on the bare spots around the house and garden, just enough to encourage the birds to come and get the weed seeds in our neighborhood.

Let us now look for a moment at the hustling little gray mouse-colored, black-capped chickadee. He is continually telling you his name, so that you cannot mistake him, but he seems never to stop hunting for insects and seeds. Do you know his sweetly plaintive "pee wee" call? Chickadees are always inquisitive, and will gladly leave their meal of eggs of canker-worms and other injurious insects to say "how-do-do" and welcome you in hearty chickadee fashion, if you are careful not to frighten them.

But there is no busy-body in the woods who knows all that is going on so well as the blue and white, handsome fellow, the bluejay. He is really the bad boy of the woods; yet, like most boys he is only bad at times and would reform if he only had a good chance. He eats a great many insects which are injurious to forest trees, and much can be forgiven for the good that he accomplishes, even if he occasionally steals fruit or birds eggs, and even kills young birds in the nest. I have known some boys who did the same things, but who grew up into useful and honored men, because by doing such things once they learned by experience that it could not be the part of a good character to destroy life needlessly.

If you have never seen the bluejays haze an owl I advise you to see the performance. The next time you hear the bluejays making a continued hubbub in the woods, and using all the time the same angry notes, with perhaps the crowds joining in the chorus, be sure and follow up the racket and see what it is about, then write to us, giving in your own words an accurate account of it.

There are a great many other kinds of birds with us in the winter, almost all of which are beneficial to man, the hawks and owls which catch more than enough mice to pay many times over for the few chickens which they kill, the woodpeckers, nuthatches, the little winter wren, the robin, and the bluebird (rightly becoming scarce, and which especially needs our protection and encouragement) the purple finch and a host of others. But I am going to stop with the hope that you will begin today to keep a list of the birds you see. Write down in a little book, which you can carry in your pocket, just when or where you meet these birds, in the woods, fields, pasture or orchard, what they were doing, what they were having for breakfast, whether alone or in flocks. In short, notice as many things as you can; write them down and then in the spring, about March 1, send to the Nature Guard, through your band or by yourself, a list of the birds, with notes about each one. When you are in Providence do not fail to go and learn what you can about the birds of Rhode Island by looking carefully at the mounted specimens in the

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museum at Roger Williams Park. Inquire for Mr. Southwick. When you come to Kingston we will be glad to have you study the collection of mounted birds here. When you know how much the wild birds are doing for us you will, I am sure, become their ardent friends and will not be content until like Hiawatha you have

"Learned of every bird its language,
Learned their names and all their secrets,
How they build their nests in summer,
Where they hide themselves in winter,"

and talk with them wherever you meet them.

THE BITTER ROT IN SOUTHERN ILLINOIS.

A correspondent writing from Mount Vernon, Jefferson county, in southern Illinois, to the St. Louis Globe-Democrat, thus describes the ravages of the bitter rot:

Mount Vernon, Ill., September 20.

The apple crop in this county, which early in the summer promised to break the record in yield and quality, has turned out to be practically a total failure, and will not supply even the home demand.

What is known as the bitter rot, a fungoid disease, which has not affected the crop here in years, broke out all over the county recently, and its ravages have been so fearful that orchards which four weeks ago promised a yield of from 1,500 to 2,000 barrels each of choice marketable fruit, do not today contain a single sound specimen. Trees on which the disease is not apparent at night may the next morning be so badly affected as to make the apples worthless. Gathering the crop seems in no way to check the development of the disease, as it breaks out in apples barrelled or housed as readily as it does in the fruit still on the trees. The common fungoid remedies seem to have no apparent effect on this new enemy to the horticulturist, as its ravages are as great in the sprayed as in the unsprayed orchards. Prof. Blair, of the State University, forwarded to County Treasurer Watkins, who owns the largest orchard in the county, a formula, which he suggests may prove beneficial in checking the development and spread of the fungus, but it came too late to give it a satisfactory trial this year. Horticulturists hereabouts are very much wrought up over the appearance of the rot among their trees, and believe that unless some remedial agent is discovered the industry in southern Illinois is doomed.

THE BELGIAN HARE TEST.

Professor Budd, of Iowa, the noted horticulturist, and whose statements are unquestioned, thus gives his observation of the pest in one case in Iowa, as he is quoted by Wallace Farmer:

"The agricultural press is now calling attention to the breeding of what is known as Belgian hares. The attempt to excite public interest comes mainly from those anxious to sell breeding stock at fancy prices. In the interest of those who have well planted lawns, small fruits and amateur orchards, we wish to utter a protest. Our native rabbits and even the jack rabbits, are relatively harmless. The Belgian hare is a fiend in his work of shrub and tree destruction. In summer and winter he gnaws bark and branches of rose bushes, plums, cherries, lilacs, snowball, indeed every tree and bush that he can reach. If confined he will not retain health without a diet of tree prunings. But they will eat about everything green of the garden or fruit plantation. As to confining them, they dig like the pocket gopher and the wire netting must extend deep into the ground where it will rust off in a year or be set on a brick or stone foundation extending in our soil four feet below the surface, to hold them. A friend in Ames had two of the pests for the children. In one year they cleared the yard of every tree and bush, and no fence they could put up or did not, could hold them twenty-four hours."

PROTECTING TREES FROM MICE AND RABBITS.

Mr. S. W. Chambers gives the following method in the Wis. Agriculturist, which we have seen tried with good success:

One of the most fruitful sources of injury to the young fruit trees in fall and winter is from mice, which seem to swarm in the orchard and seek shelter around the trees, where they nibble the bark when their other food is scarce.

In fighting against mice and rabbits I have tried all of the commonly recommended methods such as smearing the bark with blood, fat, tar and other substances supposed to be obnoxious to the rodents. If very hungry the little pests will not stay away from the trees if only blood and tar are the protections used. I have also tried wrapping newspapers around the base of the trunks, but I can not exactly see the good that this does. My method is to mound up the earth around the trunks in the fall of the year and then put a shield of wire netting a few inches from the tree. This wire netting runs up a couple of feet from the ground, and if the mesh is fine enough neither mice nor rabbits will disturb the bark. The mound of earth, I believe, helps the trees also from the winter cold. It acts in many respects as a mulch and protects the top roots from being injured by severe freezing and thawing. This alone should recommend it to the attention of all. Young trees are often blown about so by the winter winds, especially during heavy rain storms, that they are loosened at the roots, and by banking up the dirt around them we prevent this a good deal. After a storm then it is easy to press the soil close around the trunk again and when it freezes in this position it makes the tree as firm and rigid as if held there by a double anchor.

THE BLACKBERRY RUST.

One serious drawback in growing blackberries is the rust, states Orange Judd Farmer. All varieties are subject to it, and there is no remedy that can be depended upon to exterminate it after once securing a foothold. The best treatment is to watch and dig out by the roots as soon as possible all canes, new and old, that show, certainly, that they have been attacked by the rust. This can be easily told by the leaf, then being attacked having a crumpled or crinkly appearance, while the healthy ones remain smooth and later on by the rust rifts on the under side of the leaves. Plants attacked by this disease should never be allowed, under any circumstances, to remain in the patch until the rust spores or seeds are fully developed or ripened. If so they will spread the disease to other plants. Care should be exercised to dig all diseased canes in time and to burn as soon as possible. After a patch has been in bearing a few years and begins to show considerable rust it should be promptly discovered and a new one positively started, take its place.

LAWS OF OTHER NATIONS CONCERNING SAN JOSE SCALE.

In the second series of Circular No. 41, issued by the United States Department of Agriculture, a digest of the laws of various countries concerning the San Jose scale is given.

British Columbia requires inspection at wharf or station by her own officials. Infested shipments are ordered disinfected or destroyed.

Canada prohibits importations of nursery stock from the United States, Australia, Japan and Hawaii requiring the destruction of stock negative. Greenhouse plants, herbaceous plants, cuttings, bulbs and tubers are excepted. Certain periods are named during which prohibited stock

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only be imported through certain ports after fumigation.

France prohibits the importation of living plants from the United States and admits fruits only after inspection.

Germany prohibits the importation of plants, also fruits when inspection shows presence of scale. Dried or evaporated fruits are now admitted at certain ports without inspection.

Austro-Hungary prohibits the importation of American plants or fruits or wrappings which have contained same which show presence of the scale. The ports of admission are limited to three.

Belgium permits the importation of American plants and fruits through certain ports if the shipments bear certificates from competent authorities; otherwise the shipments are held for inspection and destroyed if found infected by scale.

The Netherlands prohibit the importation of American plants unless accompanied by certificate of inspection at port of shipment.

New Zealand admits live plants only at Dunedin, Christ Church, Wellington and Auckland, when accompanied by certificate or after fumigation.

Switzerland prohibits the importation of plants.

Turkey has interdicted the importation of trees, plants and fruit from the United States.

The Cape of Good Hope prohibits the importation of all plants and fruits from the United States.

THE BELGIAN HARE FRAUD.

A California correspondent of the New York Sun aptly states many strong points, when he says that less than a year ago the entire state was Belgian hare mad. Breeders were importing animals from abroad and paying exorbitant prices for them, every man with a back yard soon had a sign stretched across his house with "Rabbitry" upon it; newspapers devoted special issues to the industry, and from every standpoint it promised to rival the mineral wealth of California as a builder up of magnificent fortunes. Now the bubble has broken and the agricultural and horticultural interests of southern California are threatened with a Belgian hare pest. The effort to create a demand for the hare for food purposes was not successful, and the present market prices are considerably less than is required for feed alone, and the industry is profitless and discouraging. It is for this reason that many breeders who have become disgusted with the almost utter lack of a market for their hares are secretly, and in some instances openly, turning them loose to forage on the country in order to avoid the expense of feeding them.

The menace in this condition of affairs will, perhaps be understood better when it is stated that there are probably more than 100,000 hares in this state at present. The fecundity of the hare in this climate is beyond all expectations of the pioneers in the industry. One rabbit in this city in fourteen months raised 120 young, and there are from 50,000 to 75,000 animals in this county alone. Not only do they multiply at a wonderful rate, but they are hardy and do well in the open. The coyotes and wildcats, which are natural enemies to the rabbit family have been nearly exterminated. In years gone the jack rabbit and cottontail have been a great menace to planters, and it is only a few years since that annual rabbit drives were held, at which thousands of the animals were rounded up and slaughtered.

ANNUAL MEETING OF THE ILLINOIS STATE HORTICULTURAL SOCIETY AT CHAMPAIGN.

The forty-fifth annual convention of the Illinois State Horticultural Society will be held in the new Agricultural building of the University of Illinois at Champaign, Dec. 11, 12 and 13, 1906. Arrangements with railroads are not yet fully completed, but those who expect to attend should notify the secretary in advance, when they will be advised of whatever rates are obtained.

A program of unusual interest, both from a practical and scientific standpoint, will be presented. The following are some of the subjects which will be discussed: "The Bitter Rot of the Apple and the Ripe Rot of the Peach and Plum," Prof. Waite, Department of Agriculture; "The Pruning of Orchards: How and When It Should be Done," A. V. Schermerhorn; "Crown Gall as a Nursery Pest," Prof. S. A. Forbes; "Window Gardening," Mrs. Elizabeth Hughes; "Modern Methods of Peach Growing," A. M. Augustine; "Forestry for Illinois," Prof. Chas. A. Keffer, University of Tennessee; "Cultivation of Orchards," E. D. Voris; "Horticulture for the Farmer," J. Erhardt; "Packing and Marketing

A SIX-YEAR OLD ORCHARD.

The above represents the orchard owned by J. S. Fowler in the famous Bear River Valley of Utah. The irrigating ditches are shown through the middle of the rows.

Fruit," C. H. Williamson; "The Origin and Development of the Apple Blossom," Prof. E. S. Goff, University of Wisconsin; "Cross Fertilization," Prof. J. C. Blair; "Growing and Storing Winter Vegetables," Prof. J. W. Lloyd; "Observations Abroad," Mrs. H. M. Ingalsby; "Insect Enemies of Tree and Fruit," E. G. Green, "Apple Scab Fungus," Dr. T. J. Burrill. Other interesting features will be the reports from the State Experiment Station and also those under the control of the society; report on Nursery Inspection; "Spraying Materials"; "Pruning and Care of Shade and Ornamental Trees"; "Illinois Fruits at the Paris Exposition." Reports from delegates to other states will be interesting, and prominent horticulturists will be present as delegates from other states and will take part in the meeting.

An unusually large fruit and vegetable display is expected, for which liberal premiums are offered. A new feature will be the display of new implements and appliances used in horticulture, including spraying outfits.

This will be a good opportunity to visit the university as well as attend the horticultural meeting. For premium list and program write the secretary, L. R. Bryant, Princeton, Ill.

Cannery News.

CANNING FACTORIES.

Prof. R. K. Price, of the Texas State Agricultural and Mechanical College, thus gives his views in a recent issue of the Houston Post:

There is being manifested over the state considerable interest in canning factories. One of the greatest troubles that is preventing the development of this line of industrial work in the state has been the costliness of machinery to put the canning factories in operation. Also one important feature that has retarded the development of the work has been the failure of a few large factories that started work in the state. After taking up this line of work during the past twelve months, I am fully convinced that these two features that have stood in the way of progress along this industrial line can be overcome with ease.

The small cannery that we have had in operation here at the agricultural and mechanical college has been entirely satisfactory, and what I will say in this article will be from actual experience and observation. While our cannery has not been connected with a gin, as insistently stated in The Post of November 1, I am satisfied it could be. The steam power and the house are two of the most costly items, and these items can be found already at the cotton gins of the state. The cotton gin is not in operation at the time when canning is done. It is usually allowed to be idle and rust and wear out. The only additional cost that would be incurred in putting up the factory in connection with these gins would be that of laying the process kettles and connecting them with the steam boiler. The canning factory here only cost $350, and the capacity is estimated at 5,000 cans per day. I feel satisfied that with $250 the same outfit can be duplicated at most any cotton gin in the state.

There is no reason why vegetables should be allowed to go to waste at the various places in the state when prices in the markets go down below a figure at which it would be profitable to send them to market. They could easily be put up in cans at the local towns in the state. These cans could be shipped to other markets. It would enable the people of Texas to have a supply of these goods twelve months in the year; and instead of railroads and shipments being imported here from the north, with the additional expense of freight rates, and commission men having to be paid by the consumer, we would be eating our own home products and developing home industries. These canneries would be a great stimulus to the development of horticultural lines of work in the state. Instead of the railroads losing by the freight they make on imported canned goods, they might increase their business tenfold by the development of orchards and truck farms in the state and hauling the products from these centers of activity to other towns and states where they can not be grown or manufactured. It would encourage the development of small towns along their respective lines.

In talking this matter over at Rock Island before a truck growers' association recently, much enthusiasm was aroused in starting a factory in connection with the cotton gin at that place within the next twelve months. I hope to see it in operation within that time.

All parties desiring to begin this work should do so at once, since it requires business arrangements to grow the products for the cannery and all the canning machinery will have to be shipped from the north—probably from Chicago or Baltimore, and it will take it some time to reach Texas.

Fruit growers are beginning to get their eyes open to the magnitude of the Belgian hare fraud.

PROTECTING ORANGE TREES FROM THE FROST

The development of this work is thus given by the Florida Agriculturist:

We receive letters from parties interested in orange culture wanting to know if we expect to get out another protection edition. For some time we thought of doing this but after going over the field we find that, while there has been some advancement and developments along the line of information, that there was not enough new material to warrant the getting out of a special edition. Therefore we are publishing such information from time to time as presents itself.

The growth of trees under the sheds, that have been built for one or two years, has been satisfactory, and in most cases the sheds have been increased. One of the principle features that has been brought out through the year's experience is the fact that the trees under the sheds require a great deal less ammonia than they do in the open. This is due to two causes. The soil is protected from the hot sun so there is no escape of ammonia in this way. It is a well known fact that the direct rays of the sun on the bare soil will drive out more ammonia from the soil than a crop will take up. Shade helps to hold ammonia so that the amount that

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comes down in the rain is held within reach of the plants.

Orange trees that have been boxed have been troubled more or less with scale insects during the summer. And the owners known that this would have resulted they could have destroyed the scale insects by fumigating before the boxes were taken down. The protection that the boxes afforded the trees was given also to scale, so that it is necessary to take this into account and make use of every opportunity to eradicate the pest.

Mr. John B. Stetson, of Deland, is so thoroughly satisfied with the outlook that he has continued to increase the acreage under his shed so that he now has in the neighborhood of fifty acres covered. Mr. H. R. Stevens, who has charge of all this work, has so perfected a plan for erecting sheds that he can put up and cover two acres a week and with only a small force of men at that.

The latest device for protecting the orange tree is one studied out by Mr. E. W. Johnson, of Palatka. He makes his "box" in the shape of a hen coop and it is so arranged that the sides can be lifted apart to give the trees ventilation when needed. The ends are made of boards cut at an even length but put together in the form of slats so that as the tree grows older and taller another step can be added at the bottom, which thus enables him to use the same ends from year to year. The lumber is cut in such length that all of it can be used in forming the side of a shed to cover the whole grove later.

Mr. Johnson's protecting device has the advantage of simplicity of construction and the fact that nearly all, if not all, of the lumber can be used again.

With as many practical men at work on the subject of protection as Florida is at present producing, we feel no hesitancy in saying that this question will be solved in the course of a few years and the best method of shedding will have been brought out. The Florida growers have the faculty of hammering away until they accomplish their purpose, and we believe it will not be long before there will be many carloads of oranges shipped from the section that two or three years ago were thought to be "too far north."

TO PREVENT PEACH LEAF CURL.

Prof. Taft, of the State Experiment Station of Michigan, states that he prevents the leaf curl on the peach tree by spraying with a solution, consisting of one pound of sulphate of copper in 25 gallons of water, applied from four to six weeks before the buds open. If every bud is reached by the spray, there will be no curl.

A CHRISTMAS GIFT NEW ALL THE YEAR AROUND.

In choosing a Christmas gift what can afford more present or lasting pleasure than a subscription to The Youth's Companion? The delight with which it is welcomed on Christmas morning is renewed every week in the year.

Those who wish to present a year's subscription to a friend may also have The Companion's beautiful new "Puritan Girl" Calendar for 1901 sent with it. This calendar reproduces in 12-color printings an ideal portrait of a Puritan maiden of Plymouth. In addition to this, all the issues of The Companion for the remaining weeks of 1900 are sent free from the time subscription is received for the new volume.

Those wishing to make a present of The Companion and mentioning it when subscribing will receive, in addition to the gifts offered above, a beautiful printed certificate of subscription to place among the presents on Christmas morning.

Illustrated Announcement of the volume for 1901 sent with sample copies of the paper free to any address.

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640 ACRES of land, near Southern R. R.; good for peaches, pears, grapes, and vegetables; in the same county as Fruitdale, Alabama; good health and water; for $1,200. Fine range for cattle and sheep. Apply to L. W. McRAE, Calvert, Ala.

FOR SALE OR EXCHANGE—Six 10-acre garden, fruit or farm tracts, 4 or 5 miles from Florahome and 10 miles northwest of Palatka, Putnam Co., Fla., where there are four railroads and the St. John's river. Can be sold in either a 10, 20, 40 or 60 acre tract. Would accept house and lot in suburban town. Address X, care American Fruit and Vegetable Journal, Chicago.

FOR SALE—Choice farm of 160 acres, in Wayne county, the great fruit section of Illinois, 100 miles east of St. Louis; 120 acres under fence and in cultivation; 40 acres in woodland. Good, well painted frame house, large barn, good family orchard. Church and school adjoins the farm. Three and one-half miles from two railroad towns. Nice location and good land for either orchard or general farming. Price $50 per acre. Easy payments. Also 140-acre farm, well located, in Wayne county, Illinois, with house, barn, etc., and well fenced; nearly all in meadow. Good for either farming or fruit growing. Railroad town three miles; church and school one mile. Price $40 per acre, one fourth cash and remainder in payments. Also 4,000 acres of good unimproved timber land, adapted to either fruit, stock or wheat growing, located in Missouri, 100 miles southwest of St. Louis. Healthful location with excellent water. Price $8 per acre. Address J. H., care American Fruit & Vegetable Journal.

FOR SALE OR EXCHANGE—LARGE APPLE ORCHARD NEAR EL DORADO, in sunny Southern Kansas. The land of good roads, healthful climate, abundance of good water, numerous railroads, superior markets, good schools and churches.

This orchard consists of about 4500 first-class trees, nearly all winter apples.

It is located on 160 acres of loose, black loam, limestone soil, underlaid with a clay subsoil, and that resting on a limestone stratum, thus making a superior location, well drained and slightly. Abundance of the best water can be found from ten to sixty feet.

The orchard is thirty two miles east of the city of Wichita, on an excellent public road and only a few rods from the Atchison, Topeka & Santa Fe R. R. switch.

With the exception of a few trees, they are nearly all 12 to 14 years of age. The whole orchard is in a very healthful and vigorous condition.

The varieties are well assorted and of only the best commercial kinds. The house is a nice one story frame cottage. Title is good and market excellent.

The city of El Dorado, located on the banks of the beautiful Walnut river, is five miles south, has 3 railroads, a population of 3,500 and is the capital of Butler, the largest county of Kansas.

The owner has other business.

Address J., care American Fruit and Vegetable Journal, 713 Masonic Temple, Chicago.

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Inland Poultry Journal	.50	.50

LIQUID AIR INSTEAD OF ICE.

The Fay Fruit Company, of Los Angeles, says the Times, has made arrangements with Charles E. Tripler to use his processes and appliances for the manufacture of and employment of liquid air. The particular end in view is to equip the refrigerator cars of the company so that liquid air can take the place of ice.

Since the company ships east yearly more than 2,000 carloads of citrus fruit, vegetables, dried fruits and nuts, and the great bulk of its shipments must be made in refrigerated cars, this one phase of the matter is highly important. The plant which will be installed for liquefying air will also supply magic substances for use in every other conceivable way. F. B. Fay and his associates of the Fay Fruit Company are believed to have "got in on the ground floor" of a very important enterprise, whose consequences will be far reaching.

Mr. Tripler has broken a record and demonstrated the possibility of using liquid air for refrigerating cars in which perishable goods are shipped by sending liquid air from New York to Chicago—a distance of 1,000 miles.

PEACH RULES.

A. G. Hale has given the following ten rules for success in peach growing:

1. High, dry, sandy or sandy-loam soil.
2. Careful selection of varieties most hardy in fruit bud.
3. Vigorous, healthy seedling stocks, budded from bearing trees of undoubted purity and health.
4. Trees given the entire possession of the land from the start.
5. Thorough culture from the beginning of spring until the new growth is well along.
6. Liberal annual manuring, broadcast, with commercial manures rich in potash, and phosphoric acid and lacking in nitrogen.
7. Low heading and close annual pruning for the first five years.
8. Keep out most borers with some suitable wash, and dig out all others.
9. Search for traces of the yellows every week of the growing season, and at first sight pull up and burn every infected tree.
10. Thin the fruit so that there shall never be what is termed a full crop.

BOSTON BAKED BEANS.

Soak one pint hand-picked navy beans over night in cold water; in the morning drain off the water, and boil in fresh water for ten minutes, adding a teaspoonful of soda. This is called "parboiling" by the Yankees. Drain off this water and put the beans in stone jar—one that is smaller at the top if you have one. Add one-half pound pickled pork cut in strips, one-half cup molasses, one-half teaspoonful pepper. Cover with boiling water, and bake all day in hot oven, adding water occasionally—always keeping the pork and beans covered.

Free,--Choice Horticultural Books

THE SOIL. By F. H. King. 363 pages, 40 illustrations. Price 75c.
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THE FERTILITY OF THE LAND. By I. P. Roberts; 421 pages, 45 illustrations. Price $1.25.
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THE SPRAYING OF PLANTS. By E. G. Lodeman; 200 pages, 62 illustrations. Price $1.00.
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THE PRINCIPLES OF FRUIT-GROWING. By L. H. Bailey, 520 pages, 114 illustrations. Price $1.25.
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THE HORTICULTURIST'S RULE BOOK. By L. H. Bailey; 312 pages. Price 75c.
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FIRST LESSONS WITH PLANTS. By L. H. Bailey; 117 pages, 116 illustrations; cloth, 12 mo. Price 40 cents net.

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Editorial.

This has been a busy month for state and local horticultural meetings.

* * *

If you wish to buy or sell a fruit, stock, poultry or other farm, write us.

* * *

Can you name a better or more independent profession than horticulture?

* * *

Let the fruit grower wake up to the possibilities of the Belgian hare pest.

* * *

Subscribe for all your papers with us and save money. See our Clubbing List and what we can do.

* * *

The editor of this paper is a practical fruit grower, having spent many years in nursery and orchard work.

* * *

We are sending our paper to more real fruit and vegetable growers and shippers than perhaps any other paper published in Chicago.

* * *

Advertisers are learning the value of the American Fruit and Vegetable Journal. It is not always the number of subscribers, but the kind.

* * *

We met Mr. Irving of the Western Fruit Grower, at both the Missouri and Illinois state meetings and found him to be a most genial gentleman.

* * *

We can aid any of our readers in obtaining a good home, either in California, southern Texas or Missouri. Each place a great fruit and vegetable country.

* * *

Can not our readers give us the latest horticultural report of their locality. Short reports right to the point, suit us better.

Those who can give us reports of state and county meetings will confer a great favor.

* * *

It was a pleasure to visit the old home in southern Illinois, greet the aged parents, meet the dear friends of other years, live again the scenes of childhood and dream of boyhood days beneath the old apple trees.

* * *

The American Fruit and Vegetable Journal belongs to no seed house, nursery, ring, trust, or combine. Every advertiser is free. His advertisement will not be overshadowed by one of our own in the same line of business.

* * *

We are pleased to state to our many friends that the American Fruit and Vegetable Journal is gaining subscribers and is growing the size of its family in a very interesting way.

See our special list of free, choice horticultural books. Earn a premium.

* * *

We are just home from a three weeks' visit to state and district horticultural meetings and county farmers' institutes. It did the editor a heart good to meet the practical fruit grower, the live superintendent and the well posted professor from the state horticultural colleges. All were brimfull of good humor and information.

* * *

On the way home from the Missouri state Horticultural Society we spent the day in St. Louis, where, in company with Mr. A. T. Coffman, of Iowa, we visited the Missouri Botanical Garden and were most kindly greeted conducted over the grounds, through the green house and highly entertained by Mr. Henry C. Irish one of the genial professors and able instructors.

HORTICULTURE A PROFESSION.

The value of horticultural study and experiment is becoming more and more apparent. The educational, practical and financial advantages of the state, county, or district horticultural meeting can scarcely be estimated. Where it from either a social or pecuniary standpoint and the worth is still great.

Horticulture is no longer haphazard work. In the United States one hundred years ago, yea by many over half that time it was thought sufficient to grow the trees from seed or cutting, giving never a thought as to culture, careful selection of varieties, insect pests and the demands of the market. Then it was thought that any one who would plant a tree and cut off limbs would make a horticulturist.

DEVELOPMENT IN OTHER DEPARTMENTS.

At that same period medicine was in almost as crude a condition as horticulture. In many of the states any man could begin the practice of medicine who desired to call himself doctor and set his saddle bags with salts, calomel, quinine, rum and with forceps and lancet. The doctors in those good old days were both surgeons, dentists, barber, artist, nurse and physician, and that, too, without one hundredth part of the applications and education concerning these general subjects so understood by the skilled specialists of today. The wonder is not that they did so better but that they did so well. There were indeed some grand old doctors in the golden past some of whom indeed were real specialists and have left us the rich legacy of their discoveries and the record of their work. What is true of the development of the profession of medicine is practically true of dentistry, pharmacy, law, theology and pedagogy.

KEEPING PACE WITH THE TIMES.

Horticulture is now a science. To succeed in it one must be a skilled specialist as much as in any other profession. Its field of study, experiment and research are just as deep, great and fruitless as that of any of the so-called learned or literary professions before mentioned. The successful horticulturist of the present must be a practical specialist. He will not best succeed by combining it with farming, stock raising or many other things. But the successful horticulturist of the future must not only be a practical specialist but an educated, scientific, energetic worker in fully abreast of the times and as much skilled in his field of labor as that attained in any other profession. The study and labor required will be no greater, less than that required to attain success in other work.

SCIENTIFIC METHODS AND EXPERIMENTS.

But while horticulture can offer no royal road to fortune, nor elysian fields, free from labor and care, for perhaps rather warm and in much root for apple and berries (later on) and sun burn scale (may also come to impose his curses by day and trouble his dreams by night) will we believe the opportunities are vastly greater easier to attain, with much more independence than that to be found in any other profession.

HOW AS CITIES GROW.

When the thousands in our over-crowded professions and still more over-crowded cities are taught to obtain a few acres of land, and make of it a practically self sustaining home, the problem of the unemployed tenth will be solved, poverty will be uncommon and the imperial sway of trusts and combines ended. Labor will then be dignified and the crown of kingly merit taken from illegitimate wealth and placed on the brow of the legal lord the noble son of honest labor.

FORTY FIFTH ANNUAL MEETING OF ILLINOIS STATE HORTICULTURAL SOCIETY.

This society convened Tuesday, Dec. 11 in the assembly room of the new agricultural building of the State University at Champaign. This building for which the state appropriated $1,000 is just nearing completion. Here the department of agriculture and horticulture will each find delightful and commodious quarters. The workmen were yet so busily engaged in finishing stairs, hanging doors and placing the finishing touches to their work that their noise proved to be a very disturbing element to the proceedings of the horticultural society, yet being unavoidable was taken in good humor.

The morning session was given to the report of the treasurer and secretary, a paper "Horticulture for the Farmer," by James Friend, of Nebraska, and the President's Address."

At 2 p. m. President Draper of the University of Illinois gave the society a cheerful welcome and described the work of the university.

After the introduction of a number of visitors Mr. C. H. Williamson gave a good and very practical paper concerning "Good and Bad Methods in Packing and Marketing Fruit."

In the discussion following the paper it was stated that it was far better to pack only the very best quality of fruit placed in the market and best package. It was considered advisable to wrap the choicest fruit in paper. Use the barrel with paper and place a perforated paper head on the fruit before "heading up" the barrel. In the discussion relative to the use of barrels or boxes in which to pack and ship the fruit it was stated that the barrel was at least 40 per cent cheaper than the box. While the box occupied less space, or

rather, could be stored closer than the barrel, which was a great item when shipped in an ocean steamer, yet the barrel stood rougher handling and the fruit was not so badly bruised as in the box. President Dunlap stated that the fruit was indeed handled very roughly while being unloaded in foreign ports, as he had observed, so that a secure package was required.

The paper "The Origin and Development of the Apple Blossom," by Prof. E. S. Goff, University of Wisconsin, in the absence of the author, was read by Mr. A. M. Augustine. It was a very excellent paper, filled with instructive thought. The statement that, "Every bud on an apple tree is first formed as a leaf bud," and that these leaf buds could be converted into flower buds, was thought by some to be a departure from what had been formerly taught.

In the discussion of the paper the system of girdling the tree or limb to induce fruitfulness was described and advised under certain conditions, by Prof. Wiley, who also advised deep plowing of the orchard when it continued to be unproductive. Prof. Van Deman thought it best to prune an orchard in June or July that failed to produce fruit.

The paper on "Cross Fertilization," by Prof. J. C. Blair, of the department of horticulture, University of Illinois, was filled with much practical information that called forth an interesting discussion by Professors Wiley, Burrill and Van Deman. The necessity and advantage of planting different varieties adjacent and the good work of the bees and some other insects in disseminating the pollen, was stated.

On Tuesday night Mrs. H. M. Dunlap gave a very pleasing paper entitled, "Observations Abroad," which related in a very interesting way about her trip to Paris and the Exposition and many other points of interest. This was followed by Dr. T. J. Burrill, of the University of Illinois, with a paper on the "Apple Scab Fungus, Its Life, History and Prevention." There were so many good points in this paper that one should read it entire. Prof. Burrill thought trees should not be sprayed while in bloom. Mr. Williamson said in the discussion of the paper, that he sprayed some trees when in full bloom and obtained good results, while trees not so sprayed had scabby fruit. President Dunlap stated that when, at the Apple Shippers' Association the opinion was set forth that the best results were obtained by spraying the trees when in full bloom. He had an orchard sprayed this year when in full bloom, but could not say whether as good results might not have been obtained by spraying some other time. Prof. Wiley said he had obtained some good results from spraying when in full bloom, but would not advise it; thought we should spare the bees.

"Spraying Materials and Their Application," was the title of a paper by Mr. H. A. Aldrich, of Sugar, Ill. The discussion called forth by this paper was indeed spirited. Prof. Van Deman thought we should use a cheaper poison than paris green; he said white arsenic would do the work effectually if mixed 1 lb. arsenic to 2 lbs. water. As to the price of arsenic, it was stated that it was bought in St. Louis at wholesale last spring, in 100 lb. lots, at 7 cents per pound and salsola at 60 cents per 100 pounds.

Prof. Van Deman thought any one who used arsenic without the use of lime did it with great risk.

Mr. Baxter of Nauvoo, Ill., gave a valuable experience; he also said that he understood that Prof. Whitten, of the University of Missouri, preferred the use of arsenic.

Prof. Blair, of the University of Illinois, considered paris green a much safer insecticide than the arsenic, unless the druggist would prepare the arsenic and sell the preparation ready for use; he would therefore advise the use of paris green.

Prof. E. C. Green, of the State Experiment Station, at Urbana, Ill., followed with a paper on "Insect Enemies of Tree and Fruit, and How to Control Them." He prefaced his remarks by stating how they prepared the poison for spraying at the experiment station, using 4 lbs. of dry slake lime to 1 lb. of white arsenic, boiling it thoroughly until the lime was slacked and the whole mixture in the right condition, when it was placed in jugs and labeled for future use. This was prepared in the winter, long before spraying time.

He did not think there was any reason for spraying trees with poison while in full bloom. Concerning the use of lights and torches for the destruction of insects, he said that only the males flew at night, while the female was depositing her eggs.

While he considered the birds of great value, they would not do all the work accomplished by spraying.

Prof. Keffer, of the University of Tennessee, spoke on Forestry for Illinois, stating what trees were both useful, ornamental, hardy and worthy of being planted.

Prof. S. A. Forbes, State Entomologist, described "Crown Gall as a Nursery Pest," illustrating it with large pictures and pieces of actually affected roots. The seriousness of the trouble, causes and remedies were explained.

"Modern Methods of Peach Growing" was the subject considered by Mr. A. M. Augustine, of Georgia. He recommended the Carmen and Waldell peaches very highly, and advised the orchardist to grow his own trees.

Speaking of soil, Prof. Van Deman said that no soil was complete unless it contained an abundance of humus. For a fertilizer he considered the little black cow pea one of the best.

President Dunlap followed with a most profitable recount of "Illinois Fruits at the Paris Exposition."

The Twin City Cold Storage Company then extended an invitation to the society to visit their extensive plant, which was gladly accepted. It was indeed an interesting sight to view the process of cooling the great building and the 150 car loads of fruit stored therein. To observe how well the fruit was keeping and the excellent means for handling the same.

Wednesday evening Prof. Waite, of the U. S. Department of Agriculture, gave a very profitable illustrated lecture on "The Bitter Rot of the Apple and the Ripe Rot of the Peach and Plum; Their Cause and Prevention." He stated that while these diseases or pests had been observed in the United States for many years, that it was only recently that they had been successfully combatted. For the "Ripe Rot" of the peach a remedy was to clean up the orchard, cultivate, clean out all old, mummied and rotten peaches and spray properly. He told how Mr. Hunn, of Marshallville, Georgia, had sprayed his mammoth orchard of 175,000 peach trees four or five times, securing 180 car loads of good, marketable fruit.

As to the "Bitter Rot" of the apple, he said there were two distinct kinds of the disease, each producing the bitter taste. The disease belonged more particularly, so far as found, to the southern part of the apple belt. The apple scab he pronounced an entirely different thing, appearing to be located entirely in the northern apple region. Remedy: Clean up the orchard, spray the trees well with Bordeaux mixture before the leaves have formed, again when in bud, then three times after blooming.

We will state right here that it seemed to be the settled opinion of all the professors with whom we talked, both at the Missouri and Illinois meetings, that the Bitter Rot could be cured if the work of spraying and attendant remedies were only begun in time and rightly carried out.

Mrs. Elizabeth Hughes, of Dixon, Ill., a lady of nearly 80 years, sent a paper on "Window Gardening," which, on account of her unavoidable absence, was read, and that too in an excellent way, by J. C. Hartwell, of Dixon. The paper was replete with excellent thought and was well received.

Prof. Blair closed the evening exercises with an illustrated lecture on the Report from the State Experiment Station at Champaign, which gave a very clear idea of the manner and methods of the work done there.

J. W. Lloyd, of the University of Illinois, gave a very practical paper on "The Growing and Storing of Vegetables for Winter Use," which he has kindly given us for this issue.

The following papers, "Pruning and Care of Shade and Ornamental Trees," by ——; "The Pruning of Orchards, How and When It Should Be Done," by A. V. Schermerhorn, Rhinecliff; "Cultivation of Orchards," by F. H. Yorks, Nauvoo; "Valuable Results from Our Experiment Station," by Theodor J. C. Hartwell, Dixon;

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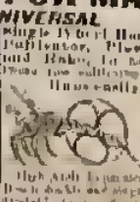

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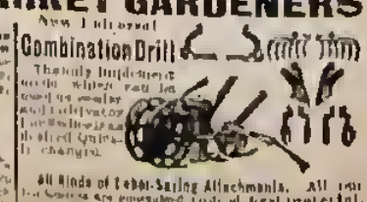

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"Report on Nursery Inspection," by Prof. S. A. Forbes, State Entomologist, as well as the "Reports of Delegates to Other State Meetings," deserve more than passing notice, did our space permit. The location of the next meeting was left in the executive committee. The meeting was characterized by the excellence of the papers and discussions and of being of an intensely practical nature. It would surely have paid every fruit grower in the state to have attended this most profitable meeting.

The following officers were re-elected: Henry M. Dunlap, Savoy, Ill., president; L. R. Bryant, Princeton, Ill., secretary; J. W. Stanton, Richview, Ill., treasurer. The only new officer chosen being W. A. Young, the vice-president.

MISSOURI STATE HORTICULTURAL MEETING.

The Forty-third annual meeting of the Missouri State Horticultural Society and at Farmington, St. Francis county, Mo., on Tuesday, Dec. 4, 5 and 6. On account of the unavoidable absence of the president, N. F. Murray of Oregon, Mo., the meeting was presided over by D. A. Robnett, vice president, of Columbia, Mo.

GOOD PROGRAM.

Among the many interesting subjects on the program, the following are worthy of more than passing notice: Birds (Illustrated), G. Widman, Old Orchard, Mo. South East Missouri for Fruits, M. Butterfield, Farmington, Mo. Pruning the Peach (Illustrated), Prof. J. C. Whitten, Columbia, Mo. Grafting Systems, S. R. Hammond, Olden, Mo. Growing Choice Nursery Trees, H. T. Tipton, Nichols, Mo. Pruning and Planting, G. P. Turner, Meadville, Mo. Crops in the Orchard, W. R. Wilkinson, Allenburg, Mo. Theory and Practice, W. T. Flournoy, Marionville, Mo. Clean Culture versus Insect Crop Raising, C. J. Zellinger, Zellonia, Mo. Packing and Marketing, A. T. Nelson, Lebanon, Mo. Cold Storage for Fruits, P. M. Kioly, St. Louis, Mo. Edible and Poisonous Mushrooms and Toadstools (Lantern Illustrations), Dr. Wm. Trelease, Mo. Bot. Garden, St. Louis, Mo. Buffalo Exhibit, general discussion. Spraying, Prof. J. T. Stinson, Mt. Grove, Mo. Fruit Sprays, J. J. Eiser, Stanberry, Mo. Bitter Rot Report, J. C. Evans, Harlem, Mo. Root Rot Experiments, Herman Von Schrenk, Mo. Bot. Garden, St. Louis, Mo. Grapes for Missouri, Ralph Bush, Bushburg, Mo. Insects Destructive to Small Fruits, Miss M. E. Murtfeldt, Kirkwood, Mo. Eleven Years' Experience in Spraying, E. J. Baxter, Nauvoo, Ill. Orcharding from the Standpoint of an Amateur, C. H. Williams, Quincy, Ill. An Entomological Trip to Old Mexico (Lantern Illustration), Prof. J. M. Stedman, Columbia, Mo.

NEXT MEETING.

The selection of the time and place of holding the coming summer and winter meeting was left with the executive committee although pressing invitations were extended by Springfield, St. Joseph and some other places.

FRUIT EXHIBIT.

The fruit exhibit was chiefly of the leading varieties of winter apples now generally grown in Missouri, such as Ben Davis, Wine Sap, Gano, Ingram, Rawles Janet, Rome Beauty, Grimes Golden, Huntsman's Favorite, Missouri Pippin, Winter Banana, Smith's Cider, York Imperial, Stark etc., while there were displayed many less common varieties, such as Niverine, Mammoth Black Twig, Paine's Late Keeper, Missing Link, etc., besides some good specimens of pears, grapes, peaches, persimmons, etc.

Paine's Late Keeper were nearly as large and almost as highly colored as an average Rome Beauty; it has indications of being a good apple.

The display of Ingram by W. T. Flournoy of Marionville, Mo., was indeed a very choice one. The Ingram has many friends among Missouri apple growers.

One peculiar feature of the apples displayed was the great difference in the appearance of some fruit of the same kind. Thus the Mammoth Black Twig from the Oldam Fruit Farm and those of L. V. Dix of Jefferson City, Mo., were nearly as highly colored as Wine Sape, while those displayed by W. P. Wilkinson were almost as pale in color as Rawles' Janet.

We saw some Rome Beauty that had been picked early that were a beautiful golden color, with very little red or blush on them, although another exhibitor near by had some that were of a beautiful rosy hue.

A choice lot of Niverines attracted much attention. We first heard of this apple the autumn of 1899 while visiting the extensive orchards of Judge Woodside at Salem, Dent county, Mo. They are supposed to have originated in southeast Missouri. The fruit is quite large, fully as big as Northern Spy, round, slightly flattened, and nearly the same color of a Yellow Bellflower. Some fruit growers consider it a very excellent variety and well worthy of planting.

CHOICE FOR COMPANY.

What was considered by many as the most profitable part of the session was the choice of varieties for an orchard of 10,000 apple trees. Although each one giving an opinion usually stuck to a very few varieties, generally not over four or five. It is worthy of notice that the following

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fourteen kinds comprise the selection of fall and winter apples of all the reports we could obtain, the choice ranking in about the order mentioned: Ben Davis, Wine Sap, Grimes' Golden, Gano, York Imperial, Ingram, Minkler, Rome Beauty, Missouri Pippin, Maiden Blush, Jonathan, Duchess, Wealthy and Williams' Favorite.

The most of the display of fruits and the greater part of the discussions were given to the apple.

THE BITTER ROT.

This serious trouble which swept away the greater part of the apple crop of southern Illinois, Missouri and Arkansas in a few weeks' time just as the fruit was nearly ready for picking the past fall, called forth much earnest inquiry for a remedy. Some partially successful experiments had been tried by spraying with the Bordeaux mixture, and it is confidently believed by many that a positive cure is in sight.

MISSOURI A FRUIT STATE.

It would be impossible in the brief space allotted us to give even a passing notice of the many excellent papers read, further than to state that it seemed to be the universal opinion that if good fruit was to be grown in Missouri, there must be a careful selection of varieties, thorough cultivation, proper, regular and systematic spraying, with the application of the most thorough study of the subject. The same as must be done wherever good fruit is produced in any other state.

The fruit displayed told plainer than words that Missouri was one of the leading fruit growing states of the Union, and truly the land of "big red apples."

Mr. Butterfield's exhibit of two-year-old apple trees was very attractive to every lover of good trees.

Every one seemed to be in a good humor, while the people of Farmington did much to add to the enjoyment of their visitors.

FARMINGTON.

Farmington is located in St. Francis county, the greatest lead producing county of the state. Seventy per cent of all the lead produced in Missouri is taken from the mines operated in this county, while it is also claimed that these mines produce 15 of the entire lead product of the world. Millions of dollars are invested here in the most improved mining machinery, while towns have sprung as if by magic with thousands of inhabitants, all of whom like to eat fruits and vegetables, yet produce none, thus making an excellent home market for the grower.

No one can visit the Missouri State Horticultural meeting without being convinced that the Missouri fruit growers are a progressive, intelligent class, fully abreast of the times, justly proud of their state, and that they can produce as choice fruit both in quality and appearance, as can be grown in the United States.

THE FRUIT AND VEGETABLE EXHIBIT AT THE FALL MEETINGS.

In spite of codlin moth, apple scab fungus, bitter rot, and warm fall weather, the fruit and vegetables exhibited at the various farm and horticultural meetings which we have attended has been very good indeed.

The Missouri exhibit was characterized by a large display of red apples. Ben Davis, Wine Sap, York Imperial, Gano, and Ingram leading the procession; although some beautiful specimens of yellow apples were exhibited in such kinds as Hunsman, Grimes Golden and Nixonite.

Illinois had a much greater variety, yet not a more attractive display. The department of horticulture of the university had a choice lot of vegetables on exhibition, as did some of the experiment stations.

The exhibits at Kinmundy, Flora and Jeffersonville were all so good that only space and time forbid mention of their many excellent qualities.

In all the state meetings we visited many premiums were given, which proved to be a great incentive to make the best display possible.

TWENTY-SEVENTH ANNUAL MEETING OF THE SOUTHERN ILLINOIS HORTICULTURAL SOCIETY.

This society convened in its annual session at Kinmundy on Tuesday, November 27. A good programme was provided and many interesting papers were read, which called forth much valuable discussion.

Sterility of Apple Orchards was the title of a very interesting and valuable paper, by J. Webster of Centralia, Ill. This very important subject was discussed in the light of time by many experienced fruit growers. It touched upon the same subject as the article on Pollination, given some months ago in the American Fruit and Vegetable Journal by Prof. Fletcher of Cornell University, New York.

Waste in Horticultural Work, was the subject of a paper by Mr. J. T. Galbraith of Carbondale, the genial editor of the Farmers Institute. Mr. Galbraith showed conclusively the importance of a good and convenient market, of a cannery, evaporator, cold storage and of all other practical means of saving the fruit after it had been produced. To every one who has observed the hundreds of bushels of fruit going to waste in the fruit regions each year of good crops the value of this paper is evident.

Prof. T. J. Burrill, of the Agricultural College of the State University, and Prof. T. H. Jones, editor of the American Fruit and Vegetable Journal, each gave enthusiastic and encouraging talks on the subject of fruit growing in southern Illinois.

The exercises were interspersed with good music which added a pleasant feature to the program.

On Wednesday, Prof. J. C. Blair, of the University of Illinois, gave one of the most timely subjects full consideration, "Bitter Rot and Kindred Diseases of the Orchard." It would have paid every apple grower in southern Illinois to have listened to this most instructive paper and discussion and to have learned that within his reach was a remedy for this serious trouble that swept away thousands of dollars worth of fruit the past season. It would have been of untold value to every apple grower of southern Illinois to have given the time and paid the small expense of attending this meeting for this one subject alone. The following excellent subjects as given on the program, were well handled and proved of much interest:

"Twenty one years with a Two-acre Apple Orchard," L. P. Dietleman, Belleville.

"My Experience with Red Raspberries," T. E. Goodrich, Cobden.

"The Peach," W. S. Ross, Alma.

"Experience with Leguminous Crops Season of 1900," A. A. Hinckley, DuBois.

"Experiences without and with the Spray Pump," J. T. Kinnery, Neoga.

"Spraying with Whale Oil Soap in the Winter," J. W. Stanton, Richview.

"Orcharding," J. W. Thompson, Carbondale.

While the local attendance was good, yet it was noticeable that the great apple growing districts of Richland, Wayne, Clay, Jefferson and many other counties, as well as much of the small fruit and vegetable growing regions of the southern counties of the state had only a few, and in many cases no representatives at all. If the society would determine to go to some new place of meeting each time, endeavor to select a new set of officers each year of representative fruit growers in the various fruit growing sections of southern Illinois, doubtless much greater interest and good might be accomplished. The meeting at Kinmundy was surely of great practical value to those who availed themselves of it.

Army officers who have investigated the Islands of Bombilon and Panilonl, part of our Philippines group, have learned that they possess the richest lands in the world for the production of rubber trees. The War Department has requested the Department of Agriculture to prepare an order setting aside these as a government forest reservation.

AGAINST CULTIVATION.

Mr. Stringfellow, of Texas, is at least provoking discussion in advocating, first, his method of planting an orchard by cutting off all the roots, making holes with a crow bar, then forcing the rootless tree stubs into these hard holes. Second in his recent letter to the Horticultural Visitor, by going a big step further, that of advocating no cultivation, about which he thus writes:

"In a foot note to W. A. Gardener's kind reference to my efforts in behalf of cheaper fruit and healthier orchards, you say "The Stringfellow method may be all right in the sandy soil of South Texas, but we would like to hear from those who have tried it in Illinois and Missouri."—Now I returned from South Texas a year ago and planted an orchard here on ground incomparably inferior to yours, and enclose herewith a photograph of several trees dug last August to show the penetration of their roots.

"I have received hundreds of letters from all over the country endorsing close root pruning, after successful trial, but the "Southwest," Springfield, Mo., has often published similar testimonials. As to non-cultivation every peach orchard around here that was cultivated last spring and summer lost much fruit by rot but not a sign appeared on trees in grass. I sent a basket of peaches from a tree not plowed or cultivated for five years, to Col. Jno. D. Cunningham, of Chicago, with request to keep a few for trial. He did so and wrote me later the following: "As you know, this has been a bad year on Geor-

gia and Texas peaches, the carrying qualities of both being below par. I put away two of the Elberta peaches out of the first basket sent ten days ago and they kept sound until yesterday, when one began to rot. The other is still sound showing signs of shrivelling before rotting. We are very agreeably surprised to note the fine color and size of the Late Crawfords sent recently." J. D. Cunningham.

As to the bitter rot now so general over the southwest, I feel sure that cultivation has greatly aggravated, if not been actually responsible for your wholesale loss of apples. I am perfectly confident that those root pruned trees set in virgin soil or on cultivated ground, if put to grass after a few years, would never show a sign of rot. Cultivation is an unnatural method, stimulating trees into a sappy growth, and destroys the millions of new feeding roots whose office it is to specially develop the fruit. While I have known this for years, it never occurred to me that very probably these surface roots were almost exclusively the feeders while the deeply penetrating ones were the moisture gatherers. This has been suggested by the clear observation of Mr. W. A. Gardner, to whom I am indebted for invaluable aid, and who had independently arrived at most of my conclusions on improved horticulture, but never taken the time to place them before the public. It is highly probable that a careful analysis of the subsoil five or ten feet below the surface, will show that plant food becomes practically insoluble at such depths, and therefore unavailable to the deep roots."

We believe Mr. Stringfellow's method of planting and then of neglecting the trees or giving no cultivation, will prove to be as successful to the average fruit grower as was Pat's method of teaching his horse to live without eating; after a long and careful experiment he succeeded in training old Dobbin to live without food, but just as he was ready to publish the result of his great discovery, he was obliged to announce the funeral of the good old horse.—Ed.

FIG GROWING IN TEXAS

The following by the Texas Rural, concerning fig growing at Alvin, Texas, shows what can be done.

The culture of figs was only begun in earnest in this section some five years ago. The trees bear the second year, the fruit beginning to ripen by July and continuing until frost. There are a few growers here who have had wonderful success and been well paid for their care and attention.

Mr. C. S. Linderman is one of the most successful men, and deserves special notice. Six years ago he settled here, buying ten acres of land, on which he built up an ideal home. Nearly all of his ten acres are growing fruit. Five years ago Mr. Linderman planted two acres in figs, and is now gathering his fourth crop. The freeze of February a year ago damaged some of his trees, and they have not fully recovered, and he estimates he has a little over an acre, from which he is now gathering.

For four days he averaged twenty crates of twenty-four quarts each, day, which brought him about $1 each net, and he estimates his present crop at [illegible] crates. Two years ago he nearly reached [illegible] crates, and last year from the effects of the cold about one-half as many. He works and fertilizes his fig trees and is rewarded. Besides figs, he is very successful with berries, marketing quantities of strawberries, blackberries and dewberries, and grows some vegetables and has a variety of fruit in bearing.

This is all done on ten acres of land, and Mr. Linderman does not wish to sell his home. He is satisfied with the country and with his business.

The editor of the American Fruit and Vegetable Journal stopped at Alvin last August, on his visit to the great cotton country of Texas, and saw the luscious figs being carried home by the pail full. In all the rich section that we visited the trees grew well on the black or sandy loam soil, producing several crops each year. The trees were very ornamental as well as useful.

BEE FARM, SOUTHWEST MISSOURI.

KEEPING FRUIT

A correspondent of the Live Stock Breeder says: "I have a nice lot of grapes and would like to keep some of them fresh for awhile. How can it be done? I would also like to know the best way for keeping apples. We have always kept them in the cellar a [illegible], but they soon get wilted. I call a cellar warm."

To which the horticultural editor then replied: "Grapes that are intended to be kept as long as possible should be picked when the dew is off and when perfectly ripe. Lay each bunch in a shallow tray smaller to prevent bruises but only one layer deep. Select only the best bunches. Set in a cool shed for about twenty-four hours, then pick out the bunches one by one, by the stem, and trench the [illegible] as little as possible. Turn each bunch around in

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the fingers and examine it closely, picking out every wounded or cracked berry. Then lay the bunches not more than two deep in shallow boxes that can be loaded as tight as possible. The best grade of grape baskets in the seven to ten pound sizes are often nearly tight. If these can be obtained they may be used to advantage. They should then be set in a cool, dry cellar which should be free from mold and white no vinegar in it and no vinegar gnats that are so common around decayed fruit and melons in the fall. The cellar should be ventilated when the outside air is cooler than within, and should have lime in it. The one day of exposure after picking is for the purpose of toughening the skins and stems. The examination of the bunches is to remove all broken berries that would start fermentation. In this way if the work be carefully done Concords can be kept four to seven weeks. The grapes selected should be only those that have been grown on high ground or on well drained soils. The Agawam and Niagara are among the best keepers. The Delaware is also a good keeper so, too, is the Wilder. The Agawam, however is about the best for general purposes. We have kept it and the Delaware until Christmas. Unfortunately, however, the grapes that keep best are not as a class hardy and need covering every winter to make it certain that the vines will endure the severe weather. Apples keep best when carefully selected and picked without any bruising. Place them in barrel at once and fill it. Select only those that are even in their condition as regards maturity. Keep out all that are prematurely ripe and all that are overgreen. Head the barrel up tight at once, so as to make it as nearly airtight as possible. Put in a lot of hay in the wagon and haul the barrels to a shed on the north side of a barn, or some place that will give similar conditions as to temperature. Give the barrels the coolest place in the shed, cover them with hay or straw deeply to keep outside air from getting at them, but if the outside air gets cooler than within, let in enough cold air to keep up a healthy ventilation. Keep the doors shut to that part of the barn next the shed. Keep the apple barrels here until November, when hard freezing weather may be expected, taking care to avoid allowing them to freeze; keep them out as late as possible then remove them to the cellar, or, still better, to a cave. Examine a few barrels and if necessary to go over them do so, but if they have been properly usued, at when they were placed in the barrels and all speckled and overripe fruit has been kept out, no sorting will be needed until holiday week. Then it will be a good plan to go over them and sort them, after which head the barrels up tight again and carry them over until February. The ordinary sugar barrel that can be secured at the store is excellent for packing, take care to match the heads. By the methods here outlined the conditions necessary for keeping apples can be provided on almost any farm. There is little or no expense attached to it, and it will prevent a great deal of loss and waste.

- It is said that R. F. Dunne, of Placer, harvested 20,025 pounds of cured raisins this year from six and one-half acres of land.

Fair Oaks.

You Are Interested in California, of course. Who is not? You have probably entertained the wish, if not actually the hope of some day inspiring in that land of sunshine and flowers, far from snow, blizzard and sunstroke, a home, where, under your own vine and fig tree, your life might run its course in happy home energy. But you have felt, perhaps, that it is but a day dream, to be discouraged as a dissipation dangerous to business. For business—your business—is far from glorious California, and on its success is dependent the happiness and welfare of wife and babies, or mother and sister. Is it not so?

Ah! but suppose that the dream could become a reality! Suppose that that terrible monster "business" might even assist in the great transformation; suppose that an association, pleasant and profitable, could be found in God's own country, where mere existence is a pleasure, and a charming home made there for the wife and babies. Would you go? No need to speak. Your face furnishes sufficient answer.

We have a modest booklet which shall open for you the gate to the promised land. (You remember that the mouse once rescued his antagonistic friend, the mighty lion.) It shall tell you how you may become possessed of the home so attractive in your dreams, but far more charming in the reality. For the home it offers you, under the cloudless skies of Fair Oaks, the suburban residence district of Sacramento, in the heart of California, while sheltered by magnificent oaks and looking, as far as the eye can reach, over picturesque swells of orchards of orange, olive, and all kinds of deciduous fruits, and vineyards of Flame, Tokay, yet offers all the conveniences of a developed and settled community, in fine residences, water piped under pressure to the door, educational facilities, postal delivery, suburban communication with a large city, etc. It shall tell you how money put into such a home may yet be made to pay as a business investment, and in a few years maintain the wife and babies as well. Will you read it carefully, consider it thoughtfully, investigate thoroughly? Then remain in a land of snow and sleep if you think best—and can!

It may be premised that this booklet does not deal with cheap lands, though Fair Oaks offers the lowest priced high-grade lands in California. Good land may be had elsewhere in California at a much lower price, provided the purchaser is satisfied to put up with some or all of these disadvantages: soil, conditions and climate unfitted for the most profitable kinds of fruit culture; remoteness from market and transportation, lack of water and water rights, or an objectionable open-field system; absence of pleasant communities, life, of suburban conveniences and educational facilities. To overcome such disadvantages, however, takes time and labor, and money; and, after many years' toil, it is often found that only a temporary abiding-place has been earned—not a family home.

For people of intelligence, or refinement, particularly if they have families, to invest in cheap lands of this description is not economy, when, for about the same amount of money, they can secure a place smaller in acreage, but more profitable in revenue and free from all disadvantages referred to. In this, as in other matters, the thoughtful purchaser carefully considers quality; the lowest priced, in these days of competition, is seldom the best or the most economical.

Our little book, then, is written not only for the man of wealth who desires to erect a California home in the midst of delightful surroundings, but as well for the man of moderate means who, while having his wealthier friends' desire for such a home, must regard it as an unattainable luxury unless it will, in a measure, pay for itself and justify him in ultimately leaving his present confining occupation. The man with modest means can, with brains and energy, make and maintain at Fair Oaks an attractive home as readily as a millionaire. And he can breathe the same air and feel as much of it. If you think you have not the means necessary to secure a home in Fair Oaks, write us, stating the circumstances. Perhaps we can find a way. And in either case send us 10 cents to pay postage and mailing, and we will send you this booklet which will tell you all about Fair Oaks and what can be done there. The booklet will be an ornament to your table also. Address American Fruit and Vegetable Journal, 713 Masonic Temple, Chicago.

CALIFORNIA FRUIT NOTES.

RAILROADING CALIFORNIA FRUIT EAST

The movement of California's winter fruit products to Chicago and other eastern markets is on in earnest. The Santa Fe, the Southern Pacific and other directly interested lines are putting the finishing touches to the preparations for handling the traffic, which promises to be the heaviest ever originating in the Golden State.

The Santa Fe and the Southern Pacific have built or are building hundreds of refrigerators for use in handling this winter's California business. The former road will handle practically all of the fruit for Chicago dealers, the Southern Pacific having a monopoly on the business to the southern cities.

Seventy-five per cent of California's deciduous fruits will be shipped from the district lying within a radius of seventy miles of Sacramento. The output of oranges, grapes and plums will be enormous, and Chicago fruiterers believe that the prices on these varieties of fruit will be abnormally low this winter. Chicago Daily News California Correspondent.

PALERMO OLIVES.

The crop of olives in this section is so large that it is with much difficulty they can be cured or pressed into oil this fall. The works of all the companies handling olives will be used to their extreme capacities for the next few weeks in trying to pickle the olives or make them into oil. Jas. Fitzgerald, of Palermo, states that he has charge of three lots of olives from as many different groves this fall. He is caring for the olives of the P. C. N. Association, of those from the grove lately bought by Louis Glass and those for Porter Bros. He is now putting into the vats about 2,000 gallons a day, and will pickle this fall at least 25,000 gallons. He has twenty-five men at work in the field and in the factory.—Oroville Register.

PENRYN, PLACER COUNTY, REPORT.

Orange shipments from Penryn will this year greatly exceed any previous season. Several carloads have already been shipped in the East by the Penryn Fruit Company, besides considerable local trade supplied.

J. Parker Whitney is harvesting a magnificent crop of about 2,500 boxes of fancy navels from Orange Terrace, west of here. He has already shipped 1,000 to 1,500 boxes of finely-colored navels to the San Francisco market. He has another grove here from which he will harvest about 2,000 to 3,000 boxes. The Pol. Bryce-Thomas and P. W. Butler groves also have very heavy crops.

Oranges, like Fair Oaks and Olive Park, is a strictly prohibition town, settled by the best class of people, affording excellent society. It is only two or three years since Penryn shipped its first car of oranges. Most of the groves here are still too young to produce very heavily. Calif. Fruit Grower.

(Penryn is about 17 miles from Fair Oaks, further away from Sacramento. Ed.)

ITEMS FROM "CALIFORNIA FRUIT GROWER."

An exchange tells of a certain ten acres of land in Sonoma county which in 1888 was planted with 1,110 Mission grape vines. The year the little vineyard paid over $300. The vines, now forty years old, are very thrifty and have never been afflicted with any vine pest since planted.

The olive crop in the county of Placer this year the largest ever known. Crushing for oil is in progress.

—Apple trees could have been found in Sonoma county a week or so ago in full bloom and in full leaf.

The olive crop in Bennett valley is good this season and most of it is going into the pickled product.

—A fourteen acres of Sultana grapes in Dinuba yielded this season 17,000 trays, a twenty-four acres of Muscats yielded 18,000 trays.

It is said that orange shipments for Thanksgiving are in excess of forty years. This would be all right if, like by-bloom of varied colors they were purchased simply to be looked at.

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J. A. Wayte has an orange orchard near Pomona will yield this season. It is the over 8,000 boxes of handsome fruit and the parcel with 5,700 boxes last year. About $670 has been laid out in prizes and cured.

Fifteen cars of oranges were sold to a Los Angeles firm by a party in Dinuba, the first to be delivered in the southern city during the present month. N. Y.

GROWING CHESTNUTS.

Perhaps the only chestnut forest in the country, save the Lehmann's Grove, is located on a little station up on the Blue Ridge mountains by Dixie Lehmann. Mr. S. H. Loose is the owner. He is a German and as the chestnut grows to a great extent on the mountains here, he reasoned if cultivated and started a larger nut of greater market value would be produced. Following out his ideas, Mr. Loose planted about twenty acres of the mountain side and planted chestnuts which grew to be several feet high the first year. Knowing the value of grafting, Mr. Loose grafted a number of these trees, with the [illegible] chestnut variety, and the consequence is [illegible] are now very [illegible]. Last season was the first year the trees bore and the nuts were so large and perfect that he sold what he gathered for ninety $1 a peck. Ten years from now, should Mr. Loose [illegible] the cultivation of chestnut trees, he will have [illegible] trees. There is no doubt the crop will be very profitable as the ground is hard for anything else but chestnut trees will

VIEW AT DRANSFIELD'S, ADJOINING SUNSET COLONY TRACT. YOUNG PEACH, PRUNE AND ORANGE TREES.

A LARGE QUANTITY OF
ROSELLE FRUIT
[illegible]
Progress Grove Nurseries, - Greenland, Fla.

Irons' Blight Proof Ohio
BLIGHT PROOF SEED POTATOES
[illegible]
W. B. IRONS, Potato Specialist, Vermontville, Mich.

Small Fruits.

VINEYARDS

M. E. Chandler, Argentine.

The grape crop of the past year was not very encouraging for the majority of the growers in the vicinity of Kansas City. This was due to the extreme cold winter and the rot of this summer. The crop was reduced to about 30 per cent. Vines have made an excellent growth this summer and are in fine condition for a crop next year. Grapes that were affected with black rot were mostly on black soil or high prairies. With us on sandy-clay soil and the rot was less than 5 per cent, and a crop of about 75 per cent. The black rot is carried through the winter in the dried grapes and leaves. The black rot is first visible as a brown speck, spreading throughout the vine. The spores of the fungi are carried through the air and germinated with the presence of water. Downy mildew is a parasitic plant growing through the tissue of the vine, and appears on the under side of the leaves as a whitish spot. Another disease is the Anthracnose, of European origin, which attacks the leaves, twigs and green shoots; its common name is bird's-eye rot. It first attacks the fruit; as it progresses it leaves blotches of diseased tissue upon the shoots and leaves. It is related to black rot.

REMEDIES FOR THE ABOVE DISEASES.

Spray with copper sulphate for black rot, and Bordeaux mixture for downy mildew, and ammoniacal solution of copper carbonate and kerosene emulsion for Anthracnose. (Six ounces pulverized ammonia carbonate and 1 ounce of copper carbonate in 10 gallons of water).

Grapes should be spraied to be kept in perfect condition. Agawam, Goethe, Lindley, Wilder, Salem and Delaware were killed to the ground. Champion were injured. Diseased grape-vines should be trimmed in the fall, raked up and burned. They should be sprayed early in the spring when the buds begin to swell. As commercial grapes I would recommend Moore's Early, Worden and Concord; Diamond, and Green Mountain for whites; Moyer, Delaware, Lindley and Goethe for red and pink. New grapes are Campbell Early and Green Mountain. (Paper read at Kansas State Horticultural Society.)

STRAWBERRIES IN THE GARDEN.

(For American Fruit and Vegetable Journal.)

By G. W. Blackwell.

The strawberry can be raised as easily as any garden vegetable, provided a few simple rules be persisted in. I say persisted in because the average amateur gardener half kills the plants with coddling at first, and then when the novelty wears off, leaves the grass and weeds to finish the job.

To begin with, the amateur, eager, mouth watering for the luscious ruby globes in prospect is petty apt to overdo the thing and make the soil too rich.

Only a small plot of ground and a small quantity of manure is needed to raise enough berries for a medium size family. Therefore, the temptation to over manure is almost irresistable. This may result in harm in various ways.

Unless the weather is favorable it is much harder to get a stand on soil heavily laden with manure of any kind. South of the Mason and Dixon line, where planting can be done in latest fall and even in the dead of winter, excessive manuring does little harm in this respect. For then there is plenty time for its burning power to pass away by leaching before the hot, dry weather of late spring and summer. However, should planting be done at the south in early fall or late spring even more care is necessary in this respect than at the north.

Now the kinds of manure which we usually recommend are stable manure and wood ashes. These are obtainable by nearly all gardeners and used in proper quantities they really form a perfect strawberry fertilizer. But stable manure in excessive quantities will make a most rampant growth of plants at the expense of fruit. Ashes furnish the potash without which in plenty there cannot be the finest fruit. But a very heavy application of ashes has a caustic effect and hinders plant growth.

In good garden soil which has had regular applications of stable manure, it is not necessary or even wise to apply any more preparatory for strawberries. If the plot has had no recent application of ashes a pound to the square yard may be used, provided it is thoroughly incorporated with the soil. This precaution must always be taken no matter what kind of manure is used before planting.

A most effective way of applying manure is as a top dressing a few months before bearing time. This mode seems to be peculiarly suited to the strawberry plant. Its roots grow near the surface and are, therefore, very quick to appropriate fertility thus applied.

A good way on rich soil is to mix in the ashes before planting and after that apply no more manure until the following winter. Then about the season that freezing weather begins, say December 1, apply evenly over plants and pubbles just enough stable manure to cover the ground. If no ashes or other form of potash was used before planting, one pound to the square yard may be evenly scattered over the whole plat.

Stable manure applied as above at the beginning of winter answers a double purpose, it both fertilizes and protects. When plants are set late in the fall or in winter on stiff soil it is a good plan to at once protect them with coarse manure. While it is best to cover the whole plot, middle and all, if the quantity of manure obtainable is limited, it may be applied just over and around the plant. Manure forking, almost any kind of litter will answer. The object is to lessen the leaving of soil incident to frequent freezes and thaws. Be careful to see that this mulch does not cover the plant too deeply, and that most of it is raked off about the time that growth begins in spring; say March 1 to 15 in the central sections of the country and earlier or later as you are South or North of that section. It must be remembered that in the far South no kind of covering can be used.

Stable manure or ashes not to be had, any fertilizer, rich in potash, will give good results.

MODE OF PLANTING.

A good way for the garden or for intensive culture generally, is to set the plants 12 to 15 inches apart in the row, according as the variety is a moderate or rank grower, and to have the rows 12 to 15 inches apart. Between every series of three rows have a two-foot alley or walk way. All runners must be clipped off as fast as they come out.

The soil should be stirred often enough throughout spring, summer and fall to kill all weeds and grass before it comes. Very shallow culture is best. If thinly done it is surprisingly light. One hour's work a fortnight will keep in order a fair sized strawberry bed—if done fortnightly. But two hours a month will not; neither will a day's work every two months. Its the stroke in time that counts here above all places.

FAILURE WITH EVERGREENS.

When once you are acquainted with evergreens they transplant as readily as elm or ash, and with as little loss, says F. S. Harrison, in Nebraska Farmer.

First—One serious trouble is the desire to get cheap trees. Seedlings are sold out at a low price by the million, and every one of them will die without special care. Such must be planted under a screen, and have the best of attention, and then many will die till they are established. The costliest trees on earth to the farmer are cheap trees. I have sold hundreds of thousands, but do not wish to do it any more unless to experts. Without proper care the losses are too large.

It all depends on the care. I had a man send me 1,000 collected silver cedars from the mountains. They died badly on the way, but I saved 90 per cent. I had the man plant 3,000 under a screen in the Beulah Nursery, Colorado, and he only saved 10 per cent. Now this man called himself an expert, but the difference was in the care.

Second—Trees will often come to you dead. Some of the largest nurseries are the worst. The men are so careless. One spring I bought from two dealers. The trees seemed alike. It is so easy to leave a lot of trees half an hour in the sun, and then pack them up beautifully in moss. But you feel some way that there is something the matter, and you know there is when you can save but 10 per cent. So one shipment had a loss of only 2 per cent, and the other 90 per cent. Both men raised good trees. One man used his conscience in handling and the other hadn't any to use. If anything will make the dunder rise it is when a man will raise a nice lot of trees, then to save a little time and a few cents extra in packing he will rob his customer out of 90 per cent.

Third—One cause of failure is that trees are not properly planted and cultivated. Evergreens can't grow unless the earth is firmly pressed around the roots, and they cannot grow in partnership with

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weeds. I have known a man to lose a $200 tree to save a dime's worth of corn. Plant well and cultivate as a good farmer would his corn and you are all right if you get the right trees. One hundred miles west of the Missouri river plant white cedar, white or black spruce, or Norway spruce or white pine, silver or Platte cedars, Austrian and Colorado pine and Black Hills spruce and Picea pungens are all right. Get a tree ten to eighteen inches, twice transplanted, and pay for it and take care of it and you are all right. Last spring I planted 2,000 Picea pungens eight to twelve inches, with heavy roots, and only lost two out of the lot.

Vegetables.

GROWING SWEET POTATOES.

Sweet potatoes are grown successfully in one-half the area of the United States. The crop produces from 100 to 300 bushels to the acre in the states south of Nebraska and New York and fair yields are reported from Maine and the warm valleys of the irrigated west. The last official census gives the yield for the entire country at 44,000,000 bushels. Expert growers estimate the actual cost of production from 10 to 20 cents per bushel. There is certainly good profit in growing the crop.

I have sold good sweet potatoes at ten cents per pound, but the general market price will not average more than one-third, or even as low as one-fourth that amount, says Joel Shomaker in Progressive Farmer. Sometimes certain conditions cause very low prices, as in other farm products, but, as a general rule, the market remains very good.

A warm, sandy, well-drained soil is the ideal spot for sweet potatoes. The crop will not be satisfactory on heavy clay land nor on old worn-out fields. New land is very good for the plant if it has not been highly fertilized with barnyard manure. The potatoes will not grow to very good success in the shade nor on a cold hillside.

The sweet potato is a heavy feeder and removes much plant food from the soil. According to reports of the United States Department of Agriculture, 185 bushels require: 10 pounds phosphoric acid, 23 pounds nitrogen and 50 pounds potash.

The potato thrives best on sandy soils, and these, as a rule, contain the least food. An average application for sweet potatoes should be about 200 to 800 pounds per acre of a fertilizer running, say, 8 per cent phosphoric acid, 8 per cent potash and 4 per cent nitrogen, to be used before planting and well mixed with the soil.

START IN A HOTBED.

Sweet potatoes are best grown from plants. These are started in a hotbed or cold frame. My best plan for getting the plants is the cold frame. Dig the pit the size required, about two feet deep. Fill in six inches with coarse leaves or barnyard litter, to insure proper drainage. Then put about six to eight inches horse stable manure, which must be well pressed down. On this add four inches of earth. Then lay the sweet potatoes as close together as possible without touching each other, and cover with fine sand or soil. Cover the bed with a cloth and on that place some boards or slats to hold the cloth in place and protect against sudden freezes. Keep the bed well watered and the plants will be a success. The bed should be made about six weeks before the time the plants are wanted, which is usually about the first of May.

VARIETIES.

There are several good varieties, the Jersey or Nansemond being best for small, early market, and the Yams best for late planting for the general market and stock feed. The potatoes will mature in from sixty to ninety days after planting. Plants should be set about 18 inches apart in four rows running north and south if possible, with plants on west side of furrow. The furrows may be three feet apart. Some plant thirty inches either way, requiring about 7,000 hills to the acre. Plants are usually set when six inches in height. The dibble is the best single-hand tool for transplanting, but several machines are now in use, by which large areas are planted. Cultivation is very simple, shallow plowing and careful weeding being the chief requisites. Most farmers think that cultivation the best, and do not disturb the seed bed only in pulling out weeds.

CROP MAY BE STORED.

The potatoes may be plowed out and after drying be marketed or put in the winter storage bins. They will keep if a uniform temperature of about 60 degrees is maintained. Some find the surplus potatoes left after the market prices drop very valuable food for horses, cattle and hogs. Several canning factories are in operation putting the potatoes in tin pound cans and placing the product on the market with very satisfactory results. Some southern housewives have found it very good and profitable to dry the potatoes in the sun, by slicing them into two pieces. The crop is one which every farmer should try, if he has the soil and the climate favorable. Seed potatoes may be obtained of seedsmen or the plants may be purchased at reasonable rates from those engaged in growing them in almost every state.

KEEPING CABBAGE.

Pull up the cabbage from where it has grown, dig a trench or, if a large quantity, throw out a deep furrow with a plow. Set the cabbage in this, as if planting it out to grow, only that the heads are close together. Place any kind of old boards nailed together, over the heads, so that when covered they will resemble the roof of a house, leaving perhaps one foot above the cabbage for ventilation. Cover these boards with a thin layer of dirt, as the weather becomes cold, and increase the covering as freezing weather approaches.

Keep the cabbage as cool as possible, except that it should not freeze. This can be regulated by having open places at each end and perhaps other places, which can be closed in the coldest weather. The following from one of our exchanges is worth repeating:

"The cabbage is a vegetable that seldom fails in Montana. The plant seems peculiarly adapted to a high cool atmosphere and succeeds remarkably well in valleys like this. But growing cabbage is one thing, while keeping them through the winter is quite another problem. The cold storage system is, of course, the best ever invented, but it is quite difficult to keep two houses or vegetable cellars from getting too warm; one may ward off the frost much easier than the heat. We have urged our readers many times to provide ample ventilation for their root houses and have received thanks time and again. A short time ago mention was made of the use of vegetables from over heating than there is from the cold. The over heating of vegetables spoils the flavor and causes decay. The cabbage will keep if it does not get too warm but we know of no other way of keeping this vegetable to last through the winter."

SALSIFY, OR OYSTER PLANT.

Vegetable oyster, or salsify, is a very valuable addition to the list of cultivated vegetables, but at present is little known and scarcely appreciated. It is not native of America, so far as is known, but is indigenous in the southeastern counties of England, where it grows in the meadows. Nothing from the ordinary sources of information can be found as to its introduction into this country, but it is not well enough known to indicate that it has been long in cultivation. Henderson, in his Gardening for Profit, says that although the consumption is limited the prices are high and remunerative and that the amount grown is increasing. Whether or not it should be grown extensively is a question that the demand for the vegetable will settle, but there is no question whatever that it is worthy of cultivation for family use in every vegetable garden.

Botanically it bears the name Tragopogon porrifolius, according to Lindley belonging to the Compositae and is a biennial plant. The varieties Long White and Sandwich Island have been tested by the horticultural depart-

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ment of the Kansas experiment station. There was little difference in the total yield, Sandwich Island being ahead, but the roots of Sandwich Island had fewer laterals and were smoother. Where a good stand the yield was very nearly a pound to the foot of row.

Salsify is easily grown, may be cultivated without trouble, and is richly stored for winter use. The seeds are sometimes planted with a drill but on account of being so sharply curved at the ends it is rather difficult to obtain an even distribution in this way, unless they are very thoroughly cleaned. They may be planted thickly, to be thinned later on, or the seeds may be dropped from four to six inches apart in the first place. The soil should be rich, but with well-rotted manure worked deep and thoroughly. Upon the perfect condition of the soil depends the straightness and smoothness of the roots, there being a tendency to branch where fresh manure is applied. The plants should be cultivated as parsnips are. They are very hardy, are not affected by frost and may be left in the ground all winter without harm. But to have the roots ready for use they should be dug in the fall and stored away in sand or sawdust where the temperature is low. If exposed to the air the roots become shriveled and tasteless and are without value.

PLANTING HORSERADISH.

This well flavored vegetable can be easily grown if given the right care and treatment. The following simple method of planting given by one of our exchanges, is worthy of consideration.

The fall is a good time to begin preparations for a horse-radish bed. A spot should be selected where the soil is deep and strong and contains a fair amount of moisture. At this time of year the soil should be pulverized to a depth of two feet or thirty inches. This is necessary, as the root requires a good deal of room in which to develop. Into this soil barnyard manure should be worked to the depth of a foot or more. We believe that some say well-rotted barnyard manure, but unrotted manure is good if it does not contain too great a proportion of straw. If the manure is put in fresh in the fall it will have become largely incorporated with the soil by spring, when the cuttings of the horseradish plant are to be put in. These cuttings should be about twelve inches long and be placed eighteen inches apart.

GOOD PEACHES FOR FLORIDA.

The East Coast Florida states that Wm. Baker of Melrose, who has had eighteen years experience with fruit growing in Florida gives the varieties of peaches that he has found most profitable for shipping north as follows: Waldo Hoggard Ellmax, Jewel and Bidwell late. The latter thought called late is an early peach. Mr. Baker advises three-fourth of the trees planted be the best three varieties mentioned and the remaining fourth be made up of the last two varieties. He finds that the Crosby varieties do not pay as shippers.

If you call a nurseryman a fraud for selling you trees not true to name, or the apple or berry grower the same for placing the best fruit on top, they will each get angry; but let a beautiful woman call her sweetheart a fraud, even when he is, and he smiles over it and rather likes it.

Cannery News.

THE VALUE OF A CANNERY.

A correspondent of the Wisconsin Agriculturist thus speaks of the cannery located in his town:

"We have been especially interested the past season in the canning industry as carried on by the factory erected here in the spring. It is certainly a fine thing for the farmers of any community."

"In the first place our people were somewhat shy of taking shares; they did not know, of course, just how the venture would turn out, but it only took a few weeks' earnest work by a couple of enthusiastic men to dispose of the 305 shares at $100 each and the erection of the building and securing of proper machinery was an assured fact. A "process man" was secured at $700 for the season's run and the work of contracting for the growing of goods to run the factory was begun. There was more hesitancy. Men are—and rightfully too—afraid of dropping the known for the unknown, and how could they tell that crops for this to them new venture would pay as well as the old ones?"

"But a sufficient acreage of corn, peas, beans and tomatoes was finally contracted for to make the run a paying possibility and the results are highly satisfactory.

"The full capacity of the factory is 50-foot cans per day. For lack of goods and hands we think the pack, for a day, did not reach that this season, but with these two requisites it can do it easily.

"Now our people are anxious to secure more shares offering premiums for them—and there is not the smallest doubt that there will be sufficient acreage contracted to make a grand run next year. The entire pack was contracted for in advance and large orders from wholesale dealers are being almost daily received and returned."

"Such an industry in the midst of a farming community is invaluable, and there seems to be no likelihood of overstocking the market for many years yet to come."

"Another thing in its favor is the employment it affords men, women and children through the otherwise dull season.

"It is a most interesting sight to see the rows of corn husters in the husking sheds; pass from these with the carriers to the sorting platform; note the speed and dexterity of the feeders as they throw out defective ears and direct the others up the elevator to the silking machine. From here they are dropped onto another platform where two persons run them into the machine which, in the time of a pulse beat, cuts the corn clean from the cob and sends it into another machine that picks out the least vestige of foreign matter. The next moment the cans are automatically filled and tumbling in double quick time before the capper at the rate of 26,000 per day. Next they are soldered and the tube in the top punctured; packed in small crates and swung into the great retorts; out again after 20 minutes of the most intense heat, swung onto an elevator and lowered to the store room. If all runs smoothly less than an hour is consumed between the husking shed and the store room.

"Of course the various vegetables follow different formulas. It seemed to us not to take so long for the tomatoes, which were packed in three-pound or three-gallon cans, and the process is not quite so intricate and interesting, but it is wonderful to see a three-gallon can filled with three strokes of the piston.

"Altogether, it is a wonderful industry to be brought right to the farmer's door. Stockholders receive one-half cent on every can packed."

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Tree Pests.

BITTER ROT.

By Col. J. C. Evans, for American Fruit and Vegetable Journal

Among fruit growers, perhaps more than any other industry, there are a great many questions to answer and a great many problems to solve. For over forty years the members of the Missouri State Horticultural Society, at their meetings, have had to tackle some question or try to solve some problem; and in some cases these questions have baffled the skill of most of our scientists. It does seem, with an experiment station in every state and territory, and vastly more learned perhaps more efficient scientists than we ever had, that we, as fruit growers, should be permitted to follow our own calling and not be expected to squander our valuable time trying to solve the problems that are constantly coming up; but here we are again, face to face with one of the toughest questions that ever confronted us. Of all the destructive agencies that ever visited our apple orchards, the one to be most dreaded and the one we know least about, is the bitter rot. This disease has prevailed to a greater or less extend over the principal apple growing belt of the Mississippi valley for the last three years, increasing each year at the rate of one hundred per cent, until in the past year, the crop of entire orchards that promised a full crop in June was totally destroyed. Its first appearance in our orchards was early in July, and up to the first of September, thirty to fifty per cent was destroyed; some varieties almost entirely and others only partially. About this time a second attack appeared which spread more or less to all varieties and finished up Ben Davis and Gano, so that not one per cent were fit to pick. These two varieties also suffered most from the first attack, while the varieties suffering least were Jonathan and Grimes, but they were picked and shipped before the second attack was fully on, and I am informed that they went down badly in cold storage and had to be repacked and sold before the 15th of November. Winkler, York, Clayton, Rome Beauty, Smith, Ingram, Wine Sap and Mammoth Black Twig suffered about the same to the extent of a loss of eighty per cent. The fruit of old trees suffered most. In an orchard thirteen years planted the disease made its first appearance three years ago on a Ben Davis tree, and destroyed more than half its fruit. The next year (last year) it had spread over the entire orchard of one hundred acres, and destroyed fifty per cent of the crop, and the past season not an apple was picked from that orchard, although (as above stated) in June it promised well for a full crop.

This orchard was sprayed three times each year with Bordeaux Mixture, but by spraying for scab and codling moth we are through spraying about the time we should begin for bitter rot.

It is perhaps a fact that constant spraying with Bordeaux Mixture, beginning early enough, and keeping the fruit covered with the mixture long enough, the disease may be kept off; but it would require more spraying than the average orchardist is willing to do. If the spraying is neglected for a short time or the rain should wash the mixture off, the spores may expand and leave large places for the spores to light and commence their work of destruction. These spores are very small and require only a small space on an apple for a start, they can be transferred to a sound apple by the prick of a sewing needle. The above conditions are about the average that I have observed during the past three years. A few young orchards in isolated places have borne good crops almost clear of bitter rot the past season, and the question is will they rot it worse next year? and will this pest continue from year to year destroying our crops, or will it, like many other pests, pass away as it came?

Most of our destructive pests are with us always in limited numbers, but periodically appear in such forces as to be alarmingly destructive.

We have had grasshoppers, army worms, chinch bugs, caterpillars, cankerworms, potato bugs, rag weed and dog fennel but they rarely become a pest two years in succession. We have not been able to determine just what combination of weather, if any, most favorable for the spread of the disease; we have observed sometimes that warm, damp weather seems to cause it to spread rapidly and at other times have the opposite effect. We are of the opinion, however, that the disease will spread more in dry weather, but after it once has a start on an apple that is where a spore takes root, and the rot begins to develop, though the speck may be so small that it is hardly perceptible to the naked eye, then the warm moist atmosphere will hasten the rot and make it more perceptible to the casual observer. When the atmosphere is heavy and damp, the spores being naturally heavier than the air and requiring a breeze to blow them to each to spread the disease it is natural to suppose that it would spread more in dry weather.

As it is something like forty-two or forty-three years since the disease prevailed to such an extent and as it has lasted then as it has this time to be [illegible] that we have had a worst year and that we will be comparatively free from it for many years to come.

BORERS IN TREES

Many orchards have suffered a heavy and unnecessary loss during the last season from the attacks of borers. Many farmers do not realize that there is anything wrong with the trees until the leaves turn yellow and begin to fall in midsummer. After this stage has been reached there is little hope for the tree and it dies before fall. A glance at the tree will be sufficient to see that the bark on the trunk is dead and [illegible] in ragged patches and there. Just beneath the bark [illegible] borers burrow [illegible] warm dust. The borer is too familiar to require description. He works up and down the side of the tree and death is due to the girdle. When two or three borers get into the same tree the bark is girdled and the tree killed. In many cases the borer works on only one side of the tree.

If a large area of bark is killed [illegible] and weed [illegible] out and the wound healed with a [illegible] growth. [illegible] through the bark of the

Courtesy A. T. Santa Fe.

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tree and develops the fruiting portion on the outside of the trunk. The fruit part is white and resembles that which is seen on rotten logs. If the tree dies the rot is then supposed to be the cause of its death. The rot may hasten the death of the tree, but a tree that is sound and free from blemishes is very seldom if ever attacked by this rot.

The best thing to do is to keep the tree free from borers and other injuries. The land should be kept free from grass and weeds and well cultivated. Good, clean cultivation is worth more than all the washes and dressings that can be applied to prevent borers. A good wash, however, is often worth many times what it costs to apply and will do much toward preventing the attacks of borers and other insects. A one pound can of concentrated lye dissolved in two or three gallons of water makes a very good tree wash. Another good wash can be made of one-half pint of pine tar, one-half pint carbolic acid, and two gallons of soft soap. These washes can easily be applied with an old whitewash brush or a swab made of old rags on the end of a stick. These washes should be applied two or three times to the trunk and large limbs during the spring and early summer.

COTTONY SCALES ON MAPLE TREES.

Professor S. H. Forbes, entomologist for the state of Illinois, says that there are three things which may be done to clear maple trees of the cottony scale; each one may be tried according to circumstances. When the scales are all practically well hatched and loosened by the formation of the egg mass beneath, they can be dislodged without great difficulty by a stream of water thrown with force from the nozzle of a hose connected with a hydrant. The tree may be shielded against the loss of sap by trimming somewhat severely after the young are practically all hatched, and a spray of kerosene emulsion diluted to contain about 7 per cent of kerosene will destroy the young if applied while they are still small and have the power of locomotion.

APPLE ROOT ROT.

This disease first attacks the small roots and then spreads to the larger roots and trunk. The roots that are attacked die and decay very rapidly. The disease spreads rapidly along the roots and in about ten years the entire root system of the tree is killed. Trees that were attacked in the summer of 1899 usually set a large crop of fruit in 1900. Many of the trees died before the fruit matured. If the trees are cut deep the first symptoms are a lack of vigor and the yellow color of the leaves. The tree shows plainly the lack of food and moisture. If the tree is set shallow, dead leaves can be seen around the base of the trunk. Trees show a great tenacity of life and live for some time when there are but a few live roots. If the dead bark is examined thin layers of a white velvety substance can be seen between the layers of bark. In the thick bark around the base of the trunk this white material is very often conspicuous but can hardly be detected on the smaller roots. A mushroom is the cause of the disease. It seldom develops the fruit stalks and caps. The fruit stalks are sent up in thick clusters from the base of the trunk. The stalks are round, from one-eighth to one-fourth of an inch in diameter and about two inches high. The cap is about the shape of an inverted bowl and is from one half to one inch in diameter. The stalks and caps of this toadstool are edible. As will be seen from the foregoing the tree is starved by having the food supply shut off.

This disease is not confined to any one variety or class of varieties. It attacks the cherry the same as the apple. There is no connection between this disease and any form of grafting, budding or transplanting as there is commonly supposed to be. Neither is it confined to trees shipped from any definite locality or climate. It is, however, so far as is known in Oklahoma, confined to orchards that were set out on land formerly covered with timber. The disease is on the roots of the forest trees and lives for several years on the decaying roots left in the ground. It spreads from the dead roots to the growing roots of the orchard trees.

There is no known cure and the only preventive seems to be not to set the trees on infected land. One tree about five inches in diameter was very badly affected. The leaves were turning yellow and the tree showed little prospects of living until fall. On examination by the horticulturist of the Oklahoma experiment station at Stillwater three-fourths of the root system was dead and the disease spreading rapidly. The dead roots were removed and the dead wood and bark cut away. About fifteen pounds of fresh, unslaked lime was worked into the soil around the tree. This work was done on July 21. A light rain fell on July 20 and 21. The leaves ceased to turn yellow and fall and on October 1 the tree showed better foliage than in July.

Orchards should not be set on timber land for three or four years after all timber has been removed. Liming the soil may hold the disease in check but can not yet be recommended as a cure or preventive.

ARIZONA AS A FRUIT COUNTRY.

This great territory is nearly always thought of as a dry, arid waste, good alone for mining, with some extensive pasture lands in the more favored valleys. But it is beginning to make its name known in the fruit and vegetable market. A western writer thus describes its horticultural interests:

"Not even the most favored sections of California are better adapted to the profitable raising of oranges. Trees grow thriftily and are not affected by disease. The fruit matures evenly, being bright, clean and highly colored. In juiciness, richness of flavor, and marketable qualities, Arizona oranges and lemons have no superior. This is admitted by California and Florida experts. As to profits, it is nothing unusual to receive $400 per acre net from a five-year-old orchard. One company alone now has 1,500 acres set in oranges, lemons and limes.

"Other fruits at home here are: Apples, pomegranates, limes, peaches, strawberries, almonds, plums, figs, quinces, nectarines, lemons, cherries, bananas, pears, olives and apricots. Peaches come into bearing early and do well. Apricots yield seventy five pounds per tree the third year, and at maturity over four hundred pounds; they are dried, and also shipped in refrigerator cars. Olives thrive well and are free from scale.

"The grape and wine industry is assuming important proportions. As a sherry wine district, experienced viticulturists pronounce Salt River Valley to be without an American rival. Seedless raisin grapes are successfully produced, and bring good prices when packed for shipment to outside markets.

"Getting fruit to market does not eat up all the profit. Besides the innumerable mining camps and stock ranches which this valley supplies, the foreign market has far east as Chicago is reached with a considerable advantage in distance, time and earliness of ripening, as compared with competing fruits from some other localities. Navel oranges are ready here for market by November 10. Farm labor ranges from $20 to $30 per month and board; domestics get $15 to $30 per month; common laborers earn $1.50 to $1.75 per day, and skilled labor $2.50 to $6; clerks receive $25 to $100 per month.

"The Salt River horticulturist is placed in a position where intelligent industry will enable him to secure results equal to those of any fruit district in the world."

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as a grower, as an early and profitable bearer, as a keeper, as to quality, as to longevity, as to freedom from insects and fungi, and blight, and as the most delicious apple grown today for family use or for commercial purposes, having received the first premium as the best new apple in the state of Illinois from the Illinois State Horticultural Society at their annual meetings of 1897, 1898 and 1899. It keeps 12 months in my cellar, and with good care has been kept much longer. Express prepaid to any part of United States on $3.00 and upward. Every tree sold under a $5.00 guarantee that it will be true to name. For further particulars address

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The present condition of all "Baldwin Cherry" trees proves that the Baldwin Cherry can withstand more severe cold and prove more vigorous and fruitful than any other cherry, and as this fact becomes known all cherry planters will call for it, as it is now generally known to be the earliest Morello type, the largest and handsomest fruit and most desirable cherry in the world. I am prepared to make special wholesale rates to the trade on one-year trees only, as all my four-year trees are sold. Order at once to be sure to get all you can use. Last year my one-year trees ran five and six feet. Send for photoplate and testimonials. The Seneca Nurseries has a large stock of Apple, Plum, Pear, Peach, Cherry, Evergreen and Ornamental Trees and Small Fruits at very low wholesale prices.

Seneca, Kansas

Horticulture in Public Schools.

ADVISES YOUNG MEN TO MAKE SCIENTIFIC STUDY OF AGRICULTURE

Secretary of Agriculture Wilson, in his speech before the Stark County Agricultural Society at Canton, Ohio, September 6, advised the young men of the nation to make a scientific study of agriculture, states one of our contemporaries. He said that half the boys of today ought to be the farmers of the coming generation and that farming had developed into a science of which its experts should be proud.

"An American educated along agricultural lines," said the secretary, "has just gone to Queensland for five years to organize work along producing lines at a salary of $15,000 a year, and I know where such a farmer is wanted at $3,000 salary in one of our new islands. I know where one is wanted in Africa at a high salary.

"In 1899 the United States sold $792,[illegible] worth of domestic produce and bought $325,311,[illegible] worth of agricultural products. Much of the latter could have been raised in the United States, the secretary held, and it was but a question of time when they would be. Wool production has so developed in this country that we have cut the importation of that commodity in half from 1898 to 1900.

"Farm animals have risen in price, not withstanding the introduction of steam and electricity and American beef in cows and mules are in demand in foreign countries. In the year ended June, 1900, the United States exported to the Orient a total of $107,[illegible] of which $[illegible] was farm products."

"A HAPPY LITTLE ARKANSAS NIGGER."

STUDY BOTANY

Speaking of the value of the study of the natural science, Prof. Hall says "that the most thoroughly educated people now believe that botany or zoology, well taught for the same length of time, affords as much discipline and culture as Latin, Greek or philosophy.

"[illegible] botany as a typical science [illegible] of the advantages of the study are training the powers of observation, inductive reasoning, memory, precise and brief description, judgment, power of arriving at correct conclusions, training the mind, the hand and the eye, cultivation of analytic and synthetic powers and practical logic; caution in [illegible] sources of error."

A DAY IN THE WOODS

By Fred W. Card, Rhode Island [illegible]

[illegible]

osity and he disappeared. I did not wait for his return, but wish that I might visit him again and become better acquainted.

How many of you have seen baby salamanders? I found some in a spring one day. They were tucked underneath a stone in the funniest little cradles which I have ever seen. These cradles were made of jelly and fastened to the stone. Each little salamander seemed to have a compartment of its own and appeared to be lively and happy. At that time they had grown to be about half an inch long and were perfectly white. I suppose that these cradles furnished them food as well as a place to sleep. I had never seen such water babies before and I did not know them. I thought they might be lizards, but when I was a school-boy no doubt helped me to find out about such things and people called everything of the kind a lizard. I had not learned the lizards have scales and salamanders live in water. I presume that most of you know much about these things and have already learned that salamanders have a soft, smooth skin and can live either in the water or out of it, as frogs do. I want to know more about newts, salamanders and lizards and I should like to have each one of you tell me whatever you have found out about them, especially if it is something which you have learned from the animals themselves.

At another time I saw a snake taking a bath in this spring. It did not appear to be a regular water-snake and I suppose did not enjoy being disturbed, for it watched me closely. At a quick motion on my part it dove from the water and disappeared. The water had been tolled not it did not see it again. Snakes breathe as we do and are supposed not to be able to live long under water, yet in all appearance this one remained under as long as I shall think. I should like to know whether it did remain under or another it was able to change its mind out of some point so shyly that I did not see it. How long know how long snakes can stay under water?

In another spring there lives a frog. I usually found him sitting on the end of an old pump by which enters the spring. At the approach of any one he would dive in the water, coat himself on the ground in the bottom of the spring and look up through the water to see what was happening. Once I lifted a cupful of water some distance and turned it into the spring directly over him. He saw it coming and dodged, but soon learned better and paid no further attention when the operation was repeated. Yet when motions outside became too threatening, as he thought, he did his head under a stone, thus apparently thinking to get out of danger.

PECANS IN FLORIDA.

In northern Florida, where the great freeze did so much damage to the small orange groves, other interests are being developed that are proving nearly as profitable as orange growing. Growing bananas and other garden vegetables for northern markets, as well as peaches, strawberries, pears, grapes, etc., has convinced the people that there are other things to depend upon besides the orange and lemon.

Pecans have long been known to grow and produce well in that sunny southern climate. A correspondent from Putnam county says that a business man of Palatka, has a number of trees, one of which is 20 years old, now loaded with a good crop, which it is estimated will yield at least $30 worth of nuts.

The demand for these nuts is greater than the supply, while of course the trees are hardy and not injured by frost as the orange and lemon trees have been.

The Florida experiment station says that the demand for both the pecan trees and nuts is far beyond the supply. The variety with large long thin shells, with thin partitions, is in the greatest demand.

Prof. H. Hume, of the Florida experiment station, gives the varieties of pecans which he would plant as follows: Louisiana, Jumbo, Frolichers, Van Deman, Stuart, Centennial and by no means would fail to put in a number of the Curtis. He would plant no seedlings unless with the expectation of top working them later on.

There is not as yet unanimity among pecan growers concerning the relative merits of seedling and grafted or budded trees. Most if not all the trees, in full bearing are seedlings. H. M. Bacon, of De Witt, Ga., says: "I have never planted a grafted or budded tree, as I do not wish to experiment with so slow a bearer as the pecan, a seedling of which will bear for hundreds of years, while the budded or grafted tree might fail me in a very few."

HOW WE EAT FRUIT.

It is stated on good authority that we consume, on an average, each year, in the United States, $80,000 worth of strawberries and at least $100,000 worth of grapes. These figures are believed are entirely too small. One season 3,000,000 barrels of apples were exported by the apple shippers of the United States to England alone. While there has been placed in cold storage in recent years as many as 10,000,000 barrels of apples in one season.

Peirsons' Magazine says that we have produced as high as 200,000,000 barrels of apples in a single season. Ships weigh anchor in New York, three at a time, in a single week, bearing apples to Europe, Liberal. It is one of the greatest industries the country has ever witnessed, and promises to take rank as the chief fruit crops of the world. As a nation we eat more fruit than any other and we grow vastly more than we eat. Husband.

LEAVES FOR BEDDING, MULCH AND PROTECTION.

Leaves make the best kind of bedding and are an important addition to the manure heap, as they are not only excellent absorbents but quickly decompose in the heap. When used in the stalls during very cold weather they prevent drafts of air along the floors and retain warmth. They cost nothing but the labor of raking and handling, and a large supply should be stored away for winter use under cover, so as to have them dry. Ex.

The leaves are excellent for protecting the young roses, tender varieties that can not withstand the cold, strawberry plants and any other plants or shrubs that can not withstand the rigor of our severe winters.

As a mulch, leaves are excellent, particularly if covered with a layer of dirt, as they retain the moisture and heat, and in time are converted into a superior fertilizer.

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(Acceptable matter under any of the following heads will be taken for 1 cent a word each insertion.)

FOR SALE OR EXCHANGE—Six 10 acre garden, fruit or farm tracts, 4 or 5 miles from Florahome and 10 miles northwest of Palatka, Putnam Co., Fla., where there are four railroads and the St. John's river. Can be sold in either a 10, 20, 40 or 80 acre tract. Would accept house and lot in suburban town. Address X care American Fruit and Vegetable Journal, Chicago.

FOR SALE OR EXCHANGE—LARGE APPLE ORCHARD NEAR EL DORADO, Butler County Southern Kansas, the land is good, water, numerous railroads, superior markets, good schools and churches.

This orchard consists of about 4000 first-class trees, nearly all winter apples.

It is located on 160 acres of loam, black loam, limestone soil, subsoil with a clay subsoil and that resting on a limestone stratum, thus making a superior location, well drained and slightly undulating. Abundance of the best water can be found from ten to sixty feet.

The orchard is thirty two miles east of the city of Wichita, Kas., on the best public road, and only a few rods from the Atchison, Topeka & Santa Fe R. R. switch.

With the exception of a few trees, they are nearly all 12 to 14 years of age. The whole orchard is in a very healthful and vigorous condition.

The varieties are well assorted and of only the best commercial kinds. The house is a nice one-story frame cottage. Title is good and market excellent.

The city of El Dorado, located on the banks of the beautiful Walnut river, is five miles south, has 3 railroads, a population of 2,500 and is the capital of Butler, the largest county of Kansas.

The owner has other business.

Address J. care American Fruit and Vegetable Journal, 713 Masonic Temple, Chicago.

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